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Sugar Bulletin, No. 19.

DEPARTMENT OF AGRICULTURE,
BRITISH GUIANA.

FIELD EXPERIMENTS WITH SUGAR CANE, XIX.

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XVI.

REPORT OF THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1950.

THE "DAILY CHRONICLE," LTD., GEORGETOWN, DEMERARA,
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FIELD EXPERIMENTS WITH SUGAR CANE, XIX.

BY

W. H. C. KNOWLES, *Sugar Agronomist.*

AND

C. CAMERON, *Field Manager.*

INTRODUCTION.

This paper summarises the results of 71 Field Experiments carried out during 1950. They consist of the following :—

Variety	.....	.....	63
Manurial	.....	.....	8

The weather during 1950 was again abnormal although the total precipitation was a few inches less than for the preceding year. The month of January proved to be the wettest ever recorded at the Sugar Experiment Station and a total of 39.84 inches fell—about 30 inches more than the average figure for the period 1921—1950. In February the rainfall approximated the average, but both March and April were very dry and hence a sharp dry season followed upon flood conditions. The mid-year rains were heavier than average but they were followed by an exceptionally dry September and finally the end of the year rains were late, December rainfall being over 9 inches below normal.

The result of this peculiar rainfall distribution did not make itself felt in the cane crop until towards the end of the Autumn reaping. At that time the effect of the flood conditions during the preceding December and January followed by the sharp dry spell in March and April became apparent and in almost all estates actual yields fell below estimate. Trials reaped during this period gave disappointing results and it is to be hoped that conditions for 1951 will approximate more closely to normality.

OUTBREAK OF DISEASE SUSPECTED TO BE 'LEAF SCALD.'

In November 1950 a disease was discovered to be affecting cane over a wide area at Pln. Uitvlugt. Subsequent investigation has made it almost certain that the disease is 'Leaf Scald' caused by the bacterium *Xanthomonas albilineans.* Hitherto leaf scald had been reported to occur, in the Western hemisphere, only in Brazil. A Colony-wide survey has shown the suspected 'Leaf Scald' to be present on the majority of estates. Worst affected is Pln. Uitvlugt, but the disease is prevalent and widespread throughout Berbice. Least affected appear to be Plns. Ogle and L.B.I. on the East Coast, Demerara,

and Plns. Versailles and Schoon Ord on the West Bank of the Demerara River. The disease is also mild in the estates situated on the East Bank of the Demerara River.

All the present commercial standard canes are known to be susceptible to the disease, which has also been found in B.37161, B. 41227 and D. 142/41. A campaign for the control and eventual elimination of the disease has been initiated and experiments to determine varietal resistance, etc., are under way. It is hoped as a result to minimise the effects of the disease if not to eradicate it.

TABLE I.—**Comparison of January—December Rainfall at Sophia Sugar Experiment Station for 1950 with the Average for 1921–1950.**

Month.	Actual Rainfall, 1950. Inches.	Average Rainfall, 1921—1950. Inches.	Excess or Deficit, Inches.
January 1950	39.84	9.67	30.17
February „	6.70	4.73	1.97
March „	1.76	4.63	- 2.87
April „	3.67	6.34	- 2.67
May „	13.00	12.34	.57
June „	17.26	14.67	2.59
July „	16.23	11.83	4.40
August „	9.68	7.61	2.07
September „	.11	2.74	- 2.63
October „	4.64	3.89	.75
November „	7.81	5.87	1.94
December „	5.17	14.43	- 9.26
Total	125.87	98.84	27.03

VARIETY TRIALS.

The results of the 1950 series of variety trials are presented and discussed under the following sub-heads, *viz* :—

(a) Variety Sorting trials ;

(b) Plant cane variety trials ;

(c) First ratoon variety trials ;

(d) Second ratoon variety trials ;

(e) Variety Performance Summary ;

(f) General Summary and Recommendations.

SUB-SECTION A.—VARIETY SORTING TRIALS.

Two Variety Sorting Trials were reaped in 1950, both of them designed as elimination trials for the Barbados 1944 seedling series. The trial in 15 W. Sophia, was cut as first ratoons in 1950 (See Bulletin XVIII for the

plant cane results) while the trial in 71 DeK., Pln. DeKinderen, was harvested as plants. The results of both trials are tabulated below.

TABLE II.—**Results of a First Ratoon "Variety Sorting" Trial on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.	
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.
	Sophia, Field 15 W. "A." Reaped 26.ix.50 at 11.25 months.							
MEANS OF 4 PLOTS:	B. 44341	30.84	16.15	88.1	4.98	108.50	B. 44244	12.55
	B. 44244	35.93	13.95	87.5	4.98	108.50	B. 44341	12.48
	B. 44111	33.24	14.93	89.8	4.96	108.06	B. 44111	11.59
	B. 4411	30.30	15.79	89.7	4.78	104.14	B. 4466	11.16
	B. 44182	33.24	14.31	89.2	4.75	103.49	B. 44182	10.95
	B. 4466	33.16	14.22	88.2	4.72	102.83	B. 4411	10.26
	B. 34104	32.22	14.33	90.6	4.62	100.65	B. 4491	10.24
	B. 44279	30.18	14.83	90.1	4.48	97.60	B. 44254	10.22
	B. 4491	31.22	14.04	89.1	4.33	95.42	B. 44279	10.05
	B. 44254	32.89	12.97	83.6	4.26	92.81	B. 34104	9.99
	B. 44269	30.89	13.55	88.0	4.18	91.07	B. 44269	9.97
	B. 44278	31.38	12.65	87.5	3.97	86.49	B. 44278	9.82
	Mean:				4.59	100.00		
	Significant Difference, 20:1:				—	—		

TABLE II.—**Results of a Plant Cane "Variety Sorting" Trial on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.	
					Tons.	% Mean.
	Pln. DeKinderen, Field 71 DeK. Reaped 1.iii.50 at 14.75 months.					
MEANS OF 4 PLOTS:	B. 44244	34.79	14.81	86.2	5.15	141.10
	B. 4466	32.21	14.41	86.0	4.64	127.12
	B. 44182	30.47	14.53	87.4	4.42	121.10
	B. 34104	31.21	13.33	87.5	4.16	113.97
	D. 62/43	28.03	14.35	85.0	4.02	110.14
	B. 44269	27.44	13.98	88.2	3.83	104.93
	D. 14/34	24.62	15.48	89.8	3.81	104.38
	B. 4411	28.05	13.32	81.0	3.73	102.19
	B. 4448	22.60	15.68	88.9	3.54	96.99
	B. 4410	29.38	12.06	82.1	3.54	96.99
	B. 44278	27.08	12.67	82.1	3.43	93.97
	B. 4409	25.08	13.26	85.3	3.32	90.96
	B. 44111	19.84	14.89	89.4	2.95	80.82
	B. 44254	18.72	13.67	79.2	2.56	70.14
	B. 44341	11.73	13.64	86.0	1.60	43.84
	Mean:				3.65	100.00
	Significant Difference, 20:1:				.80	21.92

SUB-SECTION B.—PLANT CANE VARIETY TRIALS.

Twenty-four plant cane variety trials were reaped during 1950. They are classified according to soil type and locality as follows :—

Soil Type & Locality.	*Index No. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	1—17	17
Berbice Frontland Clay	18—19	2
Riverside Clay	20—21	2
Pegassy Clay	22—24	3

TABLE III.—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 9 E. Reaped 25.ii.50 at 14.75 months.						
MEANS OF 4 PLOTS :	D. 37/45	57.14	13.45	86.4	7.68	135.69	1
	D. 3/44	43.62	15.80	89.1	7.11	125.62	
	D. 27/45	45.48	14.87	88.3	6.89	121.73	
	D. 62/45	49.78	13.47	89.7	6.70	118.37	
	D. 56/45	41.62	15.57	90.6	6.48	114.49	
	D. 8/45	42.59	14.89	89.8	6.34	112.01	
	D. 55/45	39.18	16.02	88.5	6.28	110.95	
	D. 60/45	49.18	12.54	84.9	6.17	109.01	
	D. 87/45	50.83	12.11	84.7	6.16	108.83	
	D. 41/45	41.06	14.59	93.8	5.99	105.83	
	D. 11/45	39.46	15.02	87.8	5.93	104.77	
	B. 34104	44.76	13.23	84.4	5.92	104.59	
	D. 65/45	40.56	14.55	87.8	5.90	104.23	
	D. 17/45	38.64	15.21	89.3	5.87	103.71	
	D. 48/45	36.32	15.97	89.3	5.80	102.47	
	D. 33/45	36.78	15.73	89.1	5.79	102.29	
	D. 54/45	37.13	14.93	87.3	5.54	97.88	
	D. 91/45	39.22	13.77	87.1	5.40	95.41	
	D. 76/45	36.76	14.66	88.9	5.39	95.23	
	D. 6/45	39.06	13.71	86.3	5.35	94.52	
	D. 67/45	37.40	14.19	88.3	5.31	93.82	
	D. 29/45	42.37	12.54	85.8	5.31	93.82	
	D. 1/45	33.05	15.93	90.2	5.27	93.11	
	D. 7/45	39.80	12.94	86.1	5.15	90.99	
	D. 64/45	33.65	14.87	87.9	5.01	88.52	
	D. 14/45	37.70	13.29	83.6	5.01	88.52	
	D. 61/45	40.19	12.12	86.5	4.87	86.04	
	D. 26/45	30.85	14.66	90.1	4.53	80.04	
	D. 101/45	36.23	12.39	87.8	4.49	79.33	
	D. 115/45	37.47	11.78	85.4	4.42	78.09	
	D. 15/45	25.29	13.19	86.1	3.33	58.83	
	Mean :				5.66	100.00	
	Significant Difference, 20 : 1 :				1.21	21.38	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 14 E. Reaped 8.iii.50 at 14.50 months.						
MEANS OF 4 PLOTS:	**D. 159/45**	42.95	14.65	88.6	6.29	136.15	2
	D. 165/45	48.19	12.92	85.5	6.23	134.85	
	D. 168/45	43.12	13.80	87.2	5.95	128.79	
	D. 74/45	39.96	13.96	87.8	5.58	120.78	
	D. 160/45	38.89	13.70	84.2	5.32	115.15	
	D. 162/45	38.08	13.50	87.5	5.14	111.26	
	D. 150/45	38.40	13.31	87.6	5.11	110.61	
	B. 34104	41.51	12.85	86.8	5.08	109.96	
	D. 148/45	35.70	13.75	84.8	4.91	106.28	
	D. 153/45	40.58	12.00	87.7	4.87	105.41	
	D. 120/45	36.47	13.34	83.5	4.86	105.19	
	D. 127/45	37.37	13.02	84.3	4.86	105.19	
	D. 164/45	38.74	11.83	82.0	4.58	99.13	
	D. 156/45	34.73	13.24	87.8	4.56	98.70	
	D. 137/45	34.65	12.82	87.4	4.44	96.10	
	D. 149/45	37.47	11.83	86.5	4.43	95.89	
	D. 172/45	30.58	14.42	87.4	4.41	95.45	
	D. 154/45	34.07	12.94	86.2	4.41	95.45	
	D. 171/45	30.60	14.28	90.1	4.37	94.59	
	D. 166/45	32.82	13.22	87.0	4.34	93.94	
	D. 117/45	35.15	12.34	86.8	4.34	93.94	
	D. 128/45	39.83	10.27	79.5	4.09	88.53	
	D. 129/45	33.28	12.19	84.3	4.05	87.66	
	D. 163/45	31.61	12.65	85.7	4.00	86.58	
	D. 167/45	33.13	11.92	84.9	3.94	85.28	
	D. 143/45	24.06	14.25	88.1	3.93	88.06	
	D. 157/45	30.89	12.66	84.9	3.91	84.63	
	D. 169/45	30.83	12.38	84.5	3.82	82.68	
	D. 151/45	30.71	11.90	84.7	3.65	79.00	
	D. 135/45	28.28	11.06	84.4	3.13	67.75	
	Mean:				4.62	100.00	
	Significant Difference, 20 : 1:				1.26	27.39	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 14 W. Reaped 10.iii.50 at 15.25 months.						
MEANS OF 4 PLOTS :	D. 30/45	49.38	14.47	89.7	7.14	130.77	3
	D. 94/45	43.76	15.84	92.1	6.88	126.01	
	D. 141/45	46.78	13.66	88.7	6.39	117.03	
	D. 121/45	44.43	13.77	90.1	6.12	112.09	
	D. 131/45	47.86	12.76	87.3	6.10	111.72	
	D. 133/45	40.72	14.97	88.5	6.09	111.54	
	D. 118/45	45.13	13.37	83.1	6.03	110.44	
	D. 110/45	38.66	15.54	87.9	6.00	109.89	
	B. 34104	49.13	12.12	84.6	5.95	108.97	
	D. 119/45	46.36	12.22	83.8	5.67	103.85	
	D. 124/45	46.49	12.15	82.5	5.65	103.48	
	D. 32/45	39.08	14.10	86.4	5.51	100.92	
	D. 98/45	40.10	13.59	89.8	5.45	99.82	
	D. 142/45	43.15	12.51	85.9	5.40	98.90	
	D. 144/45	42.02	12.57	84.4	5.28	96.70	
	D. 120/45	43.72	11.99	83.6	5.24	95.97	
	D. 138/45	36.11	14.09	89.5	5.16	94.51	
	D. 125/45	42.08	12.06	84.2	5.07	92.86	
	D. 130/45	36.57	13.32	85.5	4.87	89.19	
	D. 12/45	36.03	12.68	85.2	4.57	83.70	
	D. 146/45	39.98	11.44	84.0	4.57	83.70	
	D. 140/45	35.23	11.86	83.8	4.18	76.56	
	D. 147/45	32.19	12.68	87.1	4.08	74.73	
	D. 126/45	28.83	12.82	85.4	3.69	67.58	
	Mean :				5.46	100.00	
	Significant Difference, 20 : 1 :				.87	15.93	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Pln. DeKinderen, Field 51 Z.E. Reaped 15.iii.50 at 19.75 months.						
MEANS OF 5 PLOTS:	B. 40105	39.76	15.43	88.4	6.13	140.27	4
	B. 40102	43.80	13.83	85.3	6.06	138.67	
	D. 14/34	27.70	15.63	91.2	4.33	99.08	
	B. 37172	29.65	14.40	89.7	4.27	97.71	
	B. 34104	31.77	11.81	86.1	3.68	84.21	
	M. 341	25.72	12.75	87.2	3.28	75.06	
	D. 39/43	22.64	12.70	86.0	2.87	65.67	
	Mean:				4.37	100.00	
	Significant Difference, 20:1:				.53	12.13	
	Sophia, Field 11 E. "B." Reaped 23.iii.50 at 12.75 months.						
MEANS OF 4 PLOTS:	B. 4362	32.84	16.83	89.6	5.52	119.22	5
	B. 34104	33.80	16.21	91.5	5.48	118.36	
	D. 149/41	33.32	15.78	90.0	5.25	113.39	
	D. 142/45	34.36	14.60	88.3	5.02	108.42	
	D. 135/45	32.50	14.37	80.0	4.67	100.86	
	D. 153/45	31.93	14.49	87.3	4.62	99.78	
	D. 48/43	32.55	13.78	86.4	4.48	96.76	
	B. 4306	27.91	15.78	87.1	4.41	95.25	
	B. 43253	25.87	16.84	88.3	4.35	93.95	
	B. 43229	26.33	15.11	90.1	3.98	85.96	
	D. 50/43	30.18	13.16	86.2	3.97	85.75	
	D. 54/43	28.38	13.51	87.3	3.83	82.72	
	Mean:				4.63	100.00	
	Significant Difference, 20:1:				1.06	22.89	
	Sophia, Field 11 E. "A." Reaped 25.iii.50 at 12.75 months.						
MEANS OF 4 PLOTS:	B. 44165	33.10	15.42	91.2	5.10	117.78	6
	D. 14/46	34.35	14.67	89.9	5.04	116.40	
	D. 2/46	29.09	17.30	90.9	5.03	116.17	
	B. 4491	30.13	15.87	89.4	4.78	110.39	
	D. 86/45	29.21	15.45	88.7	4.51	104.16	
	D. 8/46	30.67	14.47	87.0	4.44	102.54	
	B. 34104	28.11	15.55	88.9	4.37	100.92	
	D. 9/46	25.39	16.82	90.1	4.27	98.61	
	D. 7/46	27.60	15.46	88.5	4.27	98.61	
	D. 78/45	29.27	14.58	89.4	4.27	98.61	
	D. 75/45	28.10	14.90	91.7	4.19	96.77	
	D. 4/46	25.52	16.04	91.7	4.09	94.46	
	D. 1/45	22.66	16.09	90.6	3.65	84.30	
	D. 22/46	17.76	14.65	88.2	2.60	60.05	
	Mean:				4.33	100.00	
	Significant Difference, 20:1:				1.11	25.64	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
	Sophia, Field 6 W. "A." Reaped 3.v.50 at 12.50 months.						
MEANS OF 4 PLOTS:	B. 34104	46.49	16.75	90.5	7.79	123.45	7
	D. 173/45	47.75	16.27	89.1	7.77	123.14	
	D. 6/43	47.01	16.34	90.6	7.68	121.71	
	D. 36/43	36.81	17.15	90.1	6.31	100.00	
	D. 1/43	34.73	16.66	90.2	5.79	91.76	
	D. 139/45	41.35	13.45	86.3	5.56	88.11	
	D. 170/45	37.26	14.55	89.1	5.42	85.90	
	D. 132/45	33.02	12.70	85.4	4.19	66.40	
	Mean:				6.31	100.00	
	Significant Difference, 20: 1:				1.32	20.92	
	Sophia, Field 6 W. "B." Reaped 4.v.50 at 12.50 months.						
MEANS OF 4 PLOTS:	B. 34104	45.72	18.09	91.5	8.27	121.98	8
	D. 145/45	46.92	16.02	85.4	7.51	110.77	
	D. 29/46	44.15	16.37	89.0	7.23	106.64	
	D. 3/46	40.61	17.01	90.4	6.91	101.92	
	D. 161/45	42.40	15.01	86.5	6.37	93.95	
	D. 9/46	38.16	16.54	90.4	6.31	93.07	
	D. 27/46	34.46	14.10	85.4	4.86	71.68	
	Mean:				6.78	100.00	
	Significant Difference, 20: 1:				.77	11.36	
	Pln. Ogle, Field 39 S.I. Reaped 25.viii.50 at 13.25 months.						
MEANS OF 5 PLOTS:	B. 4362	36.80	15.87	90.3	5.84	113.18	9
	D. 55/43	38.82	14.61	88.0	5.67	109.88	
	D. 58/43	40.62	13.78	85.4	5.60	108.53	
	B. 43253	33.82	15.44	90.6	5.22	101.16	
	B. 43391	38.16	12.87	87.6	4.91	95.15	
	D. 62/43	35.54	13.74	88.6	4.88	94.57	
	B. 34104	29.49	13.55	88.7	4.00	77.52	
	Mean:				5.16	100.00	
	Significant Difference, 20: 1:				.73	14.15	
	Sophia, Field 4 W. "B." Reaped 30.viii.50 at 15.75 months.						
MEANS OF 4 PLOTS:	D. 123/45	57.86	15.28	90.4	8.84	133.13	10
	D. 29/46	55.04	14.33	88.8	7.89	118.83	
	D. 24/46	50.59	13.85	87.4	7.01	105.57	
	D. 1/46	47.98	14.49	90.5	6.95	104.67	
	D. 6/43	46.20	14.85	88.9	6.86	103.31	
	B. 34104	39.92	14.18	90.4	5.66	85.24	
	D. 20/46	44.55	11.90	85.6	5.30	79.82	
	D. 27/46	36.35	12.74	84.3	4.63	69.73	
	Mean:				6.64	100.00	
	Significant Difference, 20: 1:				1.71	25.75	
	Sophia, Field 4 W. "A." Reaped 31.viii.50 at 15.75 months.						
MEANS OF 4 PLOTS:	D. 37/45	62.39	15.80	90.4	9.86	131.47	11
	D. 18/46	51.82	15.33	89.2	7.95	106.00	
	D. 17/46	53.69	14.76	88.0	7.93	105.73	
	B. 34104	49.18	15.86	91.0	7.80	104.00	
	D. 13/46	54.83	13.88	87.6	7.61	101.47	
	D. 6/46	44.52	14.56	90.1	6.48	86.40	
	D. 16/46	45.09	14.02	89.8	6.32	84.27	
	D. 19/46	37.37	16.21	90.5	6.06	80.80	
	Mean:				7.50	100.00	
	Significant Difference, 20: 1:				1.97	26.27	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
	Sophia, Field 3 W. "B." Reaped 6.ix.50 at 13.50 months.						
MEANS OF 4 PLOTS:	D. 62/43	57.44	16.13	91.1	9.26	133.81	12
	B. 34104	51.64	13.86	87.1	7.16	103.47	
	D. 49/41	50.04	14.29	90.2	7.15	103.32	
	D. 54/43	56.47	12.63	84.5	7.13	103.03	
	D. 28/43	47.84	14.59	91.0	6.98	100.87	
	B. 4362	43.67	15.80	88.7	6.90	99.71	
	B. 43391	44.17	15.04	89.9	6.64	95.95	
	B. 4408	49.21	13.32	85.4	6.56	94.80	
	B. 4110	41.41	14.65	89.8	6.07	87.72	
	D. 14/44	42.78	12.53	86.5	5.36	77.46	
	Mean:				6.92	100.00	
	Significant Difference, 20: 1:				.86	12.43	
	Sophia, Field 3 W. "A." Reaped 8.ix.50 at 13.50 months.						
MEANS OF 4 PLOTS:	B. 34104	51.57	13.64	88.8	7.03	114.68	13
	D. 58/43	46.61	14.25	88.8	6.64	108.32	
	D. 149/41	48.81	15.09	89.2	6.61	107.83	
	D. 18/43	43.61	15.07	88.7	6.57	107.18	
	D. 49/41	42.14	14.87	89.0	6.27	102.28	
	B. 43253	36.05	17.16	90.9	6.18	100.82	
	D. 48/43	45.53	13.27	86.6	6.04	98.53	
	B. 44248	46.32	12.96	88.3	6.00	97.88	
	B. 44270	45.17	13.14	87.5	5.94	96.90	
	D. 24/43	44.21	13.16	86.2	5.82	94.94	
	B. 4487	41.73	10.30	82.7	4.30	70.15	
	Mean:				6.13	100.00	
	Significant Difference, 20: 1:				.95	15.50	
	Pln. L.B.I., Field 20 L.R. Reaped 4.ix.50 at 14.25 months.						
MEANS OF 5 PLOTS:	D. 54/43	49.25	14.08	87.3	6.93	115.31	14
	B. 43214	50.35	13.42	86.2	6.76	112.48	
	D. 58/43	45.40	14.57	86.2	6.61	109.98	
	D. 149/41	42.94	14.43	84.9	6.20	103.16	
	D. 24/43	44.13	14.01	85.8	6.18	102.83	
	B. 34104	38.59	13.18	85.2	5.08	84.53	
	B. 43391	44.03	9.79	67.4	4.31	71.71	
	Mean:				6.01	100.00	
	Significant Difference, 20: 1:				.76	12.65	
	Sophia, Field 1 E. "B." Reaped 24.ix.50 at 14.75 months.						
MEANS OF 4 PLOTS:	D. 87/45	57.42	15.32	87.4	8.80	115.64	15
	D. 8/45	57.29	14.80	88.8	8.48	111.43	
	D. 23/45	48.45	16.88	88.0	8.18	107.49	
	D. 27/45	49.73	15.80	87.6	7.86	103.29	
	D. 18/45	53.68	14.64	87.6	7.86	103.29	
	D. 43/45	53.00	14.73	87.9	7.81	102.63	
	B. 34104	53.53	14.41	88.4	7.71	101.31	
	D. 7/45	47.41	14.95	87.4	7.09	93.17	
	D. 29/45	51.41	12.27	85.6	6.31	82.92	
	D. 6/45	45.06	13.27	87.5	5.98	78.58	
	Mean:				7.61	100.00	
	Significant Difference, 20: 1:				1.57	20.63	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 1 E. "A." Reaped 2.xi.50 at 15.00 months.						
MEANS OF 4 PLOTS:	D. 37/45	59.76	16.50	88.6	9.86	138.29	16
	B. 34104	46.48	16.70	90.4	7.76	108.84	
	D. 19/45	46.59	16.62	89.3	7.74	108.56	
	D. 11/45	49.54	15.63	90.1	7.74	108.56	
	D. 56/45	43.04	17.58	90.9	7.57	106.17	
	D. 54/45	42.62	17.46	88.0	7.44	104.35	
	D. 14/45	43.90	16.87	89.4	7.35	103.09	
	D. 35/45	42.40	16.39	88.7	6.95	97.48	
	D. 28/45	41.56	15.51	88.8	6.45	90.46	
	D. 36/45	38.99	14.89	88.8	5.80	81.35	
	D. 49/45	35.73	15.92	90.0	5.69	79.80	
	D. 52/45	35.11	14.91	87.5	5.23	73.35	
	Mean:				7.13	100.00	
	Significant Difference, 20: 1:				1.50	21.04	
	Pln. Enmore, Field 27 H.E. Reaped 14.xii.50 at 13.25 months.						
MEANS OF 5 PLOTS:	B. 4448	45.51	15.81	84.8	7.20	113.92	17
	B. 44341	43.75	15.85	85.6	6.93	109.65	
	B. 44165	40.24	16.35	88.3	6.58	104.11	
	B. 44244	41.75	15.62	86.8	6.52	103.16	
	B. 44111	43.80	13.91	85.2	6.09	96.36	
	B. 4098	42.10	14.12	80.7	5.95	94.15	
	B. 34104	38.36	15.50	88.7	5.94	93.99	
	D. 158/41	39.75	13.48	84.5	5.36	84.81	
	Mean:				6.32	100.00	
	Significant Difference, 20: 1:				—	—	

Results of Plant Cane Variety Trials on Berbice Frontland Clay.

	Pln. Blairmont, Field 21 Rp. Reaped 22.ii.50 at 19.25 months.						
MEANS OF 5 PLOTS:	B. 41227	74.47	12.32	82.5	9.18	106.62	18
	D. 158/41	86.73	10.40	75.0	9.02	104.76	
	B. 34104	71.16	12.60	81.8	8.96	104.06	
	B. 4362	65.34	13.01	85.8	8.50	98.72	
	Co. 421	79.75	10.67	77.5	8.50	98.72	
	B. 4098	74.61	11.08	78.5	8.27	96.05	
	B. 40102	69.98	11.17	76.6	7.82	90.82	
	Mean:				8.61	100.00	
	Significant Difference, 20: 1:				—	—	
	Pln. Albion, Field 60 A. Reaped 2.xi.50 at 13.00 months.						
MEANS OF 5 PLOTS:	D. 158/41	45.25	15.50	85.5	7.01	126.31	19
	B. 4098	38.34	15.51	87.4	5.95	107.21	
	D. 58/43	43.66	13.59	81.9	5.93	106.85	
	D. 48/43	42.95	13.32	82.6	5.72	103.06	
	B. 34104	34.36	15.18	86.5	5.22	94.05	
	B. 43391	37.00	13.54	82.4	4.94	89.01	
	B. 43330	33.18	12.20	82.0	4.05	72.97	
	Mean:				5.55	100.00	
	Significant Difference, 20: 1:				.53	9.55	

TABLE III. (Contd.).—**Results of Plant Cane Variety Trials on Riverside Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Pln. Peter's Hall, Field 77. Reaped 18.v.50 at 16.00 months.						
MEANS OF 5 PLOTS:	D. 149/41	40.18	15.44	86.7	6.20	120.39	20
	B. 4362	35.50	15.35	84.4	5.45	105.83	
	D. 158/41	36.96	13.44	84.9	4.97	96.50	
	B. 34104	31.88	12.54	86.1	4.00	77.67	
	Mean:				5.15	100.00	
	Significant Difference, 20: 1:				.43	8.35	
	Pln. Diamond, Field 55 G.D. Reaped 28.ix.50 at 14.00 months.						
MEANS OF 5 PLOTS:	B. 4362	51.41	14.02	87.8	7.21	124.10	21
	B. 43253	48.29	13.96	85.8	6.74	116.01	
	D. 58/43	55.83	11.80	80.2	6.59	113.43	
	D. 54/43	52.07	11.90	79.9	6.19	106.54	
	B. 4110	49.53	10.56	75.2	5.23	90.02	
	D. 149/41	44.03	11.08	78.8	4.88	83.99	
	B. 34104	34.56	11.17	81.9	3.86	66.44	
	Mean:				5.81	100.00	
	Significant Difference, 20: 1:				.76	13.08	

Results of Plant Cane Variety Trials on Pegassy Clay.

	Pln. Wales, Field Patencia "F". Reaped 19.viii.50 at 16.50 months.						
MEANS OF 5 PLOTS:	B. 4098	59.83	17.54	92.1	10.49	150.94	22
	B. 37172	49.05	15.79	92.2	7.75	111.51	
	B. 4362	49.19	15.72	88.6	7.74	111.37	
	D. 50/43	48.80	14.46	87.0	7.06	101.58	
	D. 14/34	34.64	16.61	92.5	5.75	82.73	
	B. 34104	35.87	13.80	90.9	4.95	71.22	
	D. 36/43	30.42	16.22	91.8	4.94	71.08	
	Mean:				6.95	100.00	
	Significant Difference, 20: 1:				.93	13.38	
	Pln. Versailles, Field 49 M.T. Reaped 22.xi.50 at 15.50 months.						
MEANS OF 5 PLOTS:	B. 44341	40.78	16.65	86.4	6.79	117.68	23
	B. 41227	43.49	14.84	88.4	6.45	111.78	
	B. 4098	43.99	14.55	88.5	6.40	110.92	
	B. 44244	40.74	14.81	87.8	6.03	104.51	
	B. 34104	38.52	15.14	90.7	5.83	101.04	
	B. 44111	37.38	15.21	88.8	5.69	98.61	
	B. 44165	32.76	13.82	89.7	4.53	78.51	
	B. 4448	31.46	14.17	84.3	4.46	77.30	
	Mean:				5.77	100.00	
	Significant Difference, 20: 1:				1.00	17.33	
	Pln. Cornelia Ida, Field 78 A.C. Reaped 10.i.50 at 15.00 months.						
MEANS OF 5 PLOTS:	B. 41227	65.38	13.39	86.4	8.76	125.50	24
	B. 34104	62.12	12.83	86.2	7.97	114.18	
	B. 37172	59.83	12.41	88.6	7.42	106.30	
	B. 40105	50.85	12.97	85.2	6.60	94.56	
	B. 4098	42.46	14.63	89.4	6.21	88.97	
	D. 149/41	40.48	12.23	86.7	4.95	70.92	
	Mean:				6.98	100.00	
	Significant Difference, 20: 1:				1.12	16.05	

SUB-SECTION C.—FIRST RATOON VARIETY TRIALS.

Twenty-four first ratoons variety trials were reaped. They have been classified as follows :—

Soil Type & Locality.	*Index No. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	25—39	15
Berbice Frontland Clay	40—42	3
Riverside Clay	43—45	3
Pegassy Clay	46—48	3

TABLE IV.—**Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 16 W. Reaped 11.iii.50 at 13.25 months.								
MEANS OF 3 PLOTS :	D. 62/43	42.66	15.96	89.1	6.81	129.71	D. 62/43	12.95	25
	D. 48/43	38.45	14.62	88.3	5.62	107.05	D. 158/41	12.36	
	D. 149/41	36.30	15.41	90.7	5.59	106.48	D. 149/41	12.22	
	B. 34104	36.17	15.32	91.0	5.54	105.52	D. 48/43	12.01	
	D. 158/41	33.83	15.57	88.2	5.27	100.38	D. 54/43	10.96	
	D. 145/41	31.69	15.90	88.9	5.04	96.00	D. 4/43	10.95	
	D. 4/43	32.00	15.42	91.3	4.94	94.10	D. 7/43	10.84	
	D. 7/43	35.80	13.37	87.5	4.79	91.24	B. 34104	10.05	
	D. 54/43	33.47	13.34	90.9	4.47	85.14	D. 145/41	9.87	
	D. 58/43	34.13	12.88	85.9	4.39	83.62	D. 58/43	9.04	
	Mean :				5.25	100.00			
	Significant Difference, 20 : 1 :				1.19	22.67			
	Sophia, Field 8 E. "B." Reaped 16.iii.50 at 12.25 months.								
MEANS OF 4 PLOTS :	D. 10/44	36.21	13.91	86.7	5.03	116.71	D. 7/44	10.70	26
	D. 1/44	33.72	13.68	87.3	4.61	106.96	D. 1/44	10.53	
	D. 3/44	31.74	14.49	87.3	4.60	106.73	B. 34104	10.33	
	B. 34104	31.46	14.60	89.8	4.59	106.50	D. 13/44	10.03	
	D. 7/44	32.88	13.56	84.7	4.46	103.48	D. 3/44	9.97	
	D. 13/44	33.47	13.01	84.6	4.35	100.93	D. 10/44	9.94	
	D. 6/44	29.40	13.44	86.6	3.95	91.65	D. 6/44	9.82	
	D. 12/44	25.29	11.47	85.1	2.90	67.29	D. 12/44	7.18	
	Mean :				4.31	100.00			
	Significant Difference, 20 : 1 :				0.79	18.33			
	Sophia, Field 8 E. "A." Reaped 21.iii.50 at 11.50 months.								
MEANS OF 4 PLOTS :	B. 34104	34.06	15.74	90.8	5.36	125.53	B. 34104	11.40	27
	D. 26/44	33.29	13.44	86.4	4.47	104.68	D. 26/44	9.89	
	D. 14/44	31.63	13.18	88.9	4.17	97.66	D. 27/44	9.87	
	D. 27/44	30.31	13.50	84.0	4.09	95.78	D. 14/44	9.55	
	D. 25/44	22.14	14.83	82.7	3.28	76.81	D. 25 44	8.03	
	Mean :				4.27	100.00			
	Significant Difference, 20 : 1 :				—	—			

TABLE IV. (Contd.).—**Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 2 E. "A." Reaped 18.iv.50 at 12.25 months.								
MEANS OF 4 PLOTS:	D. 62/43	40.28	15.98	89.7	6.43	116.06	D. 62/43	14.14	28
	B. 41227	36.25	15.85	90.8	5.74	103.61	B. 41227	12.85	
	B. 34104	33.60	16.89	92.7	5.67	102.35	B. 34104	12.60	
	D. 28/43	36.04	15.25	89.9	5.50	99.28	D. 28/43	12.32	
	D. 4/43	33.99	15.89	89.7	5.39	97.29	D. 4/43	12.00	
	D. 55/43	29.88	15.13	89.2	4.52	81.59	D. 55/43	11.26	
	Mean:				5.54	100.00			
	Significant Difference, 20 : 1:				—	—			
	Pln. Leonora, Field 48 E. Reaped 18.iv.50 at 11.75 months.								
MEANS OF 5 PLOTS:	B. 4098	27.58	17.02	90.7	4.89	108.06	B. 4098	11.85	29
	B. 41227	26.38	15.85	89.7	4.18	96.31	B. 41227	10.76	
	B. 34104	24.89	16.71	91.1	4.16	95.85	B. 34104	9.35	
	Mean:				4.34	100.00			
	Significant Difference, 20 : 1:				.39	8.99			
	Sophia, Field 11 W. "A." Reaped 25.iv.50 at 12.00 months.								
MEANS OF 4 PLOTS:	D. 7/44	38.95	15.42	89.7	6.01	108.29	D. 13/44	10.99	30
	D. 13/44	39.55	14.79	85.4	5.85	105.41	D. 7/44	10.41	
	D. 50/43	37.39	14.67	86.7	5.48	98.74	D. 50/43	9.40	
	B. 34104	29.42	16.59	91.3	4.88	87.93	B. 34104	8.73	
	Mean:				5.55	100.00			
	Significant Difference, 20 : 1:				.45	8.11			
	Sophia, Field 11 W. "B." Reaped 25.iv.50 at 12.00 months.								
MEANS OF 4 PLOTS:	D. 62/43	42.36	17.18	91.3	7.28	133.33	D. 62/43	12.38	31
	B. 34104	29.21	17.25	92.1	5.04	92.31	D. 55/43	11.35	
	D. 55/43	30.62	15.65	88.8	4.79	87.73	D. 28/43	9.49	
	D. 28/43	31.13	15.22	84.4	4.74	86.81	B. 34104	9.16	
	Mean:				5.46	100.00			
	Significant Difference, 20: 1:				.96	17.58			
	Sophia, Field 8 W. "B." Reaped 15.ix.50 at 12.25 months.								
MEANS OF 4 PLOTS:	B. 4362	34.27	16.22	88.6	5.56	107.96	D. 142/41	12.10	32
	B. 43349	40.26	13.36	86.0	5.38	104.47	B. 43349	11.95	
	D. 142/41	37.28	14.32	88.8	5.34	103.69	B. 4362	11.35	
	B. 43229	33.12	14.98	89.2	4.96	96.31	B. 34104	10.66	
	D. 49/41	33.29	14.58	87.9	4.85	94.17	D. 49/41	10.37	
	B. 34104	39.90	12.08	85.8	4.82	93.59	B. 43229	10.36	
	Mean:				5.15	100.00			
	Significant Difference, 20 : 1:				—	—			
	Sophia, Field 1 W. Reaped 13.ix.50 at 12.25 months.								
MEANS OF 4 PLOTS:	D. 49/41	47.47	14.71	88.4	6.98	107.38	D. 49/41	13.49	33
	B. 34104	47.90	13.33	86.3	6.38	98.15	D. 130/41	12.42	
	D. 130/41	45.76	13.41	87.8	6.14	94.46	B. 34104	11.58	
	Mean:				6.50	100.00			
	Significant Difference, 20 : 1:				—	—			

TABLE IV. : (Contd.).—Results of First Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined Results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
Sophia, Field 2 W. "A." Reaped 22.xiii.50 at 15.50 months.									
MEANS OF 4 PLOTS:	D. 4/43	43.96	14.76	91.0	6.49	113.46	D. 35/43	11.74	34
	D. 6/43	39.47	16.03	92.1	6.33	110.66	D. 4/43	11.73	
	D. 35/43	39.23	15.79	90.6	6.19	108.22	D. 158/41	11.62	
	D. 158/41	37.29	14.71	87.8	5.48	95.80	D. 18/43	11.43	
	D. 18/43	35.01	14.76	88.9	5.17	90.38	D. 6/43	11.15	
	B. 34104	38.50	12.19	89.2	4.69	81.99	B. 34104	9.70	
	Mean:				5.72	100.00			
	Significant Difference, 20: 1:				1.05	18.36			
Sophia, Field 2 W. "B." Reaped 17.xiii.50 at 15.50 months.									
MEANS OF 4 PLOTS:	D. 62/43	51.21	14.21	88.3	7.28	127.50	D. 62/43	12.99	35
	D. 55/43	41.16	12.28	86.8	5.05	88.44	D. 55/43	9.84	
	B. 34104	37.12	12.92	87.1	4.80	84.06	B. 34104	8.92	
	Mean:				5.71	100.00			
	Significant Difference, 20: 1:				1.07	18.74			
Sophia, Field 12 W. "A." Reaped 10.xiii.50 at 14.75 months.									
MEANS OF 4 PLOTS:	D. 49/41	42.97	15.73	90.2	6.76	108.68	D. 49/41	13.99	36
	D. 158/41	38.61	15.55	88.9	6.17	99.20	D. 158/41	13.91	
	B. 34104	37.47	16.20	90.5	6.07	97.59	B. 43413	12.54	
	B. 43413	36.78	15.99	89.9	5.88	94.53	B. 34104	11.53	
	Mean:				6.22	100.00			
	Significant Difference, 20: 1:				—	—			
Sophia, Field 12 W. "B." Reaped 4.xiii.50 at 14.25 months.									
MEANS OF 4 PLOTS:	D. 4/43	49.41	14.69	89.7	6.93	128.33	D. 4/43	14.97	37
	D. 35/43	40.37	14.96	89.1	6.04	111.85	D. 35/43	12.54	
	B. 34104	33.65	14.30	88.5	4.81	89.07	D. 25/43	11.24	
	D. 25/43	35.22	13.64	85.0	4.80	88.89	B. 34104	11.06	
	D. 34/43	32.48	13.66	87.8	4.44	82.22	D. 34/43	11.00	
	Mean:				5.40	100.00			
	Significant Difference, 20: 1:				1.17	21.67			
Sophia, Field 8 W. "A." Reaped 16.ix.50 at 12.00 months.									
MEANS OF 4 PLOTS:	B. 43413	38.55	15.11	87.7	5.82	113.23	B. 43413	12.95	38
	D. 142/41	33.35	15.44	89.2	5.15	100.19	B. 4214	11.32	
	B. 4214	33.12	15.28	89.3	5.06	98.44	D. 142/41	10.81	
	B. 34104	35.77	13.52	89.5	4.84	94.16	D. 49/41	10.67	
	D. 49/41	31.92	15.10	88.3	4.82	93.77	B. 34104	10.43	
	Mean:				5.14	100.00			
	Significant Difference, 20: 1:				.62	12.06			
Sophia, Field 15 W. "B." Reaped 23.ix.50 at 11.25 months.									
MEANS OF 3 PLOTS:	B. 4448	36.03	16.10	85.9	5.80	124.73	B. 4448	12.61	39
	B. 34104	37.32	14.64	89.4	5.46	117.42	B. 34104	11.88	
	B. 44165	29.48	15.07	90.4	4.44	95.48	B. 44165	11.06	
	B. 44150	31.50	13.95	86.8	4.39	94.41	B. 44150	10.12	
	B. 4408	31.12	13.02	87.5	4.05	87.10	B. 4408	9.73	
	M. 134/32	28.35	13.32	84.8	3.78	81.29	M. 134/32	8.14	
	Mean:				4.65	100.00			
	Significant Difference, 20: 1:				1.26	27.10			

TABLE IV. (Contd.).—**Results of First Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Port Mourant, Field A.E. 2. Reaped 21.ii.50 at 14.25 months.								
MEANS OF 5 PLOTS:	B. 41227	55.50	14.26	83.9	7.92	113.96	B. 41227	14.30	40
	B. 40105	52.33	14.61	84.9	7.65	110.07	B. 40105	13.75	
	D. 142/41	47.47	15.55	91.5	7.38	106.19	Co. 421	13.71	
	Co. 421	45.22	14.50	85.0	6.55	94.24	D. 142/41	13.50	
	B. 34104	44.37	14.35	87.4	6.37	91.65	B. 37172	12.40	
	B. 37172	40.99	14.17	87.1	5.81	83.60	B. 34104	11.52	
	Mean:				6.95	100.00			
	Significant Difference, 20 : 1:				1.36	19.57			
	Pln. Albion, Field 3 J. Reaped 28.iii.50 at 12.25 months.								
MEANS OF 5 PLOTS:	B. 41227	48.68	16.50	87.0	8.03	126.46	B. 41227	14.79	41
	B. 40105	42.29	16.07	87.0	6.80	107.09	B. 40105	13.18	
	B. 34104	41.38	16.35	86.3	6.77	106.61	B. 41211	12.33	
	B. 37172	39.80	15.56	88.4	6.19	97.48	B. 34104	11.55	
	B. 41211	39.59	14.64	88.8	5.79	91.18	B. 40102	11.54	
	B. 40102	40.31	13.96	83.9	5.63	88.66	B. 37172	11.08	
	Co. 421	34.16	15.26	86.9	5.21	82.05	Co. 421	10.90	
	Mean:				6.35	100.00			
	Significant Difference, 20 : 1:				0.76	11.97			
	Pln. Rose Hall, Field 47 T. Reaped 18.x.50 at 12.25 months.								
MEANS OF 5 PLOTS:	B. 34104	37.83	13.65	89.4	5.16	116.22	B. 4214	11.55	42
	B. 43229	34.43	14.19	82.5	4.88	109.91	B. 34104	11.22	
	B. 4214	35.55	11.37	77.0	4.04	90.99	B. 43229	11.20	
	B. 4306	34.76	10.65	76.3	3.70	83.33	B. 4306	10.31	
	Mean:				4.44	100.00			
	Significant Difference 20 : 1 :				.83	18.69			

Results of First Ratoon Variety Trials on Riverside Clay.

	Pln. Blairmont, Field 21 Rp. Reaped 21.xii.50 at 10.00 months.								
MEANS OF 5 PLOTS:	B. 41227	30.95	17.12	87.5	5.30	115.22	B. 41227	14.48	43
	B. 34104	29.77	16.15	88.8	4.81	104.57	B. 34104	13.77	
	D. 158/41	30.61	14.73	84.1	4.51	98.04	D. 158/41	13.53	
	B. 4362	26.31	16.15	84.1	4.25	92.39	B. 4362	12.75	
	B. 4098	25.17	16.50	83.5	4.15	90.22	B. 4098	12.42	
	Mean:				4.60	100.00			
	Significant Difference, 20 : 1:				—	—			
	Pln. Providence, Field 5 R.P. Reaped 20.iv.50 at 13.00 months.								
MEANS OF 5 PLOTS:	D. 142/41	41.62	15.89	87.4	6.62	129.04	D. 142/41	13.21	44
	D. 158/41	33.73	15.04	87.9	5.07	98.83	D. 158/41	12.51	
	B. 34104	31.72	15.00	88.9	4.76	92.79	D. 49/41	11.93	
	D. 49/41	32.18	14.59	89.0	4.69	91.42	B. 34104	11.43	
	Co. 419	28.42	15.94	87.0	4.53	88.30	Co. 419	11.32	
	Mean:				5.13	100.00			
	Significant Difference, 20 : 1:				1.26	24.56			

TABLE IV. (Contd.).—Results of First Ratoon Variety Trials on Riverside Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. Blairmont, Field 24 R. Reaped 12.x.50 at 12.75 months.								
MEANS OF 5 PLOTS:	D. 62/43	43.92	14.69	83.8	6.45	111.40	D. 142 41	13.55	45
	D. 142/41	39.89	15.20	83.4	6.06	104.66	D. 62/43	13.03	
	B. 4098	38.55	14.76	84.3	5.69	98.27	Co. 421	12.69	
	Co. 421	37.89	14.89	83.9	5.64	97.41	B. 34104	12.01	
	B. 34104	38.24	13.37	82.8	5.11	88.26	B. 4098	11.86	
	Mean:				5.79	100.00			
	Significant Difference, 20: 1:				--	--			
	Results of First Ratoon Variety Trials on Pegassy Clay.								
	Pln. Diamond, Field 109|50 G.D. Reaped 31.v.50 at 13.25 months.								
MEANS OF 5 PLOTS:	B. 41227	47.91	14.97	92.6	7.17	113.09	B. 41227	14.54	46
	B. 41211	41.96	16.20	89.5	6.80	107.26	Co. 419	12.67	
	B. 40105	39.35	15.12	90.6	6.56	103.47	B. 40105	12.57	
	Co. 419	38.50	16.91	90.3	6.51	102.68	B. 41211	12.41	
	D. 49/41	39.70	15.42	90.0	6.12	96.53	D. 49/41	11.22	
	B. 34104	29.98	16.32	89.8	4.89	77.13	B. 34104	9.10	
	Mean:				6.34	100.00			
	Significant Difference, 20: 1:				.77	12.15			
	Pln. Lusignan, Field 97 M.X.E. Reaped 5.x.50 at 12.75 months.								
MEANS OF 5 PLOTS:	B. 40105	31.64	16.36	88.7	5.18	118.00	B. 40105	11.20	47
	B. 41227	34.53	13.94	87.3	4.81	109.57	B. 41227	10.07	
	D. 49/41	29.09	14.43	87.8	4.28	97.49	Co. 421	9.50	
	B. 34104	30.23	13.00	86.7	3.93	89.52	D. 49 41	9.28	
	Co. 421	26.20	14.29	87.3	3.74	85.19	B. 34104	7.43	
	Mean:				4.39	100.00			
	Significant Difference, 20: 1:				—	—			
	Pln. Cornelia Ida, Field 78 A.C. Reaped 28.ii.50 at 10.50 months.								
MEANS OF 5 PLOTS:	B. 41227	40.28	14.19	86.0	5.72	127.11	B. 41227	14.48	48
	B. 37172	35.49	15.55	88.8	5.52	122.67	B. 37172	12.94	
	B. 34104	37.69	12.58	85.7	4.74	105.33	B. 34104	12.71	
	D. 149/41	27.52	14.45	87.4	3.98	88.44	B. 40105	10.23	
	B. 40105	23.55	15.83	84.1	3.73	82.89	B. 4098	9.55	
	B. 4098	21.12	15.80	85.2	3.34	74.22	D. 149/41	8.93	
	Mean:				4.50	100.00			
	Significant Difference, 20: 1:				1.30	28.89			

SUB-SECTION D.—SECOND RATOON VARIETY TRIALS.

Thirteen second ratoon trials were reaped. They have been classified as follows :—

Soil Type & Locality.	*Index No. of Trials.*	*No. of Trials.*
Demerara Frontland Clay	49—56	8
Berbice Frontland Clay	57—59	3
Riverside Clay	60	1
Pegassy Clay	61	1

TABLE V.—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Ogle, Field 38 O. Reaped 28.iii.50 at 11.25 months.								
MEANS OF 5 PLOTS :	B. 34104	34.74	16.62	89.3	5.77	108.26	B. 34104	18.73	49
	D. 49/41	37.73	15.46	87.2	5.68	106.57	Co. 421	18.06	
	Co. 421	32.25	14.05	84.6	4.53	84.99	D. 49/41	17.63	
	Mean :				5.33	100.00			
	Significant Difference, 20 : 1 :				—	—			
	Sophia, Field 5 W. "A." Reaped 24.viii.50 at 11.00 months.								
MEANS OF 4 PLOTS :	D. 40/43	36.26	16.08	89.9	5.83	112.98	D. 6/43	20.76	50
	B. 34104	36.25	15.66	92.1	5.46	105.81	D. 40/43	20.47	
	D. 6/43	32.87	14.55	90.1	4.78	92.64	B. 34104	19.84	
	D. 24/43	29.64	15.39	88.7	4.56	88.37	D. 24/43	18.69	
	Mean :				5.16	100.00			
	Significant Difference, 20 : 1 :				.80	15.50			
	Sophia, Field 10 W. "B." Reaped 20.ix.50 at 11.75 months.								
MEANS OF 4 PLOTS :	D. 18/43	32.27	15.15	87.7	4.89	106.77	D. 142/41	16.57	51
	B. 34101	31.91	14.13	89.7	4.51	98.47	D. 18/43	16.38	
	D. 142/41	30.38	14.28	88.8	4.34	94.76	B. 34104	13.84	
	Mean :				4.58	100.00			
	Significant Difference, 20 : 1 :				—	—			
	Sophia, Field 10 W. "A." Reaped 25.ix 50 at 11.75 months.								
MEANS OF 4 PLOTS :	D. 54/43	36.91	15.26	86.9	5.63	113.74	D. 54/43	19.39	52
	D. 23/43	33.31	15.59	90.0	5.19	104.85	D. 58/43	19.11	
	D. 58/43	32.69	15.58	87.6	5.09	102.83	D. 142/41	17.14	
	D. 48/43	33.31	14.79	86.1	4.93	99.60	D. 48/43	17.03	
	B. 34104	32.20	15.16	90.4	4.88	98.59	B. 34104	14.58	
	D. 8/43	33.06	14.17	88.9	4.68	94.55	D. 23/43	11.70	
	D. 142/41	28.40	14.92	87.8	4.24	85.66	D. 8/43	10.88	
	Mean :				4.95	100.00			
	Significant Difference, 20 : 1				.59	11.92			

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 13 W. Reaped 28.ix.50 at 11.00 months.								
MEANS OF 4 PLOTS:	B. 43214	36.11	15.99	86.1	5.78	126.48	B. 43214	18.40	53
	D. 54/43	35.79	14.84	84.6	5.31	116.19	D. 54/43	18.33	
	B. 4373	34.20	15.16	84.1	5.19	113.57	B. 4373	17.89	
	B. 43253	28.33	16.48	88.3	4.67	102.19	B. 43253	17.22	
	B. 43391	35.09	13.09	85.7	4.59	100.44	D. 48/43	16.29	
	D. 48/43	33.84	13.33	84.3	4.51	98 69	B. 4327	15.81	
	B. 4327	30.26	14.80	85.6	4.48	98.03	B. 43391	15.48	
	B. 34104	31.09	14.14	87.7	4.39	96.06	B. 4110	15.47	
	D. 14/34	24.69	15.87	89.1	3.92	85.78	B. 34104	15.16	
	B. 4306	26.95	14.13	83.3	3.81	83.37	D. 14/34	14.72	
	B. 4110	23.61	15.33	87.9	3.62	79.21	B. 4306	14.55	
	Mean:				4.57	100.00			
	Significant Difference, 20: 1:				.61	13.35			
	Sophia, Field 10 E. "B." Reaped 4.x.50 at 11.75 months.								
MEANS OF 4 PLOTS:	D. 149/41	30.10	15.88	87.3	4.78	110.39	D. 149/41	16.65	54
	D. 58/43	30.99	15.31	85.3	4.74	109.47	D. 58/43	16.61	
	B. 34104	30.05	15.11	90.8	4.54	104.85	D. 55/43	15.23	
	D. 145/41	25.89	15.96	87.2	4.13	95.38	D. 142/41	15.11	
	D. 142/41	27.57	14.55	87.0	4.01	92.61	D. 145/41	14.86	
	D. 55/43	24.16	15.71	86.6	3.80	87.76	B. 34104	13.81	
	Mean:				4.33	100.00			
	Significant Difference, 20: 1:				—	—			
	Sophia, Field 10 E. "A." Reaped 6.x.50 at 11.75 months.								
MEANS OF 4 PLOTS:	D. 158/41	33.63	16.00	85.8	5.38	116.70	D. 158/41	19.42	55
	D. 145/41	30.18	16.06	86.9	4.85	105.21	D. 145/41	18.67	
	B. 34104	29.05	15.22	89.3	4.42	95.88	D. 142/41	15.50	
	D. 142/41	25.47	14.86	87.1	3.78	82.00	B. 34104	14 64	
	Mean:				4.61	100.00			
	Significant Difference, 20: 1:				.83	18.00			
	Pln. L.B.I., Field 55 A.C.M. Reaped 24.xi.50 at 11.50 months.								
MEANS OF 5 PLOTS:	B. 41227	32.28	15.02	86.7	4.85	119.75	B. 41227	19.21	56
	B. 40105	33.03	14.40	86.8	4.75	117.28	D. 142/41	16.98	
	D. 142/41	28.12	15.77	86.5	4.44	109.63	B. 40105	16.38	
	B. 34104	14.67	14.84	87.6	2.18	53.83	B. 34104	8.66	
	Mean:				4.05	100.00			
	Significant Difference, 20: 1:				.55	13.58			

TABLE V. (Contd.).—**Results of Second Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Pln. Port Mourant, Field A.E. 2. Reaped 22.xi.50 at 9.00 months.									
MEANS OF 5 PLOTS:	B. 41227	34.68	14.93	87.1	5.18	130.81	B. 41227	19.48	57
	B. 40105	29.03	15.14	86.0	4.40	111.11	B. 40105	18.15	
	B. 37172	27.64	15.58	86.3	4.30	108.59	D. 142/41	17.72	
	D. 142/41	32.99	12.79	84.0	4.22	106.57	B. 37172	16.70	
	Co. 421	19.87	14.37	80.5	2.86	72.22	Co. 421	16.57	
	B. 34104	21.04	13.27	84.5	2.79	70.45	B. 34104	14.31	
	Mean:				3.96	100.00			
	Significant Difference, 20: 1:				.56	14.14			
Pln. Rose Hall, Field T. 8 B. Reaped 19.x.50 at 11.50 months.									
MEANS OF 5 PLOTS:	B. 41227	34.50	14.36	86.4	4.95	114.32	B. 41227	17.44	58
	B. 40105	35.44	13.29	80.9	4.71	108.78	B. 40105	16.85	
	D. 142/41	28.86	14.75	86.3	4.26	98.38	D. 142/41	15.05	
	Co. 421	27.35	14.20	84.1	3.88	89.61	Co. 421	14.71	
	B. 34104	28.83	13.43	82.5	3.87	89.38	B. 34104	13.88	
	Mean:				4.33	100.00			
	Significant Difference, 20: 1:				.75	17.32			
Pln. Blairmont, Field 36 Rp. Reaped 3.v.50 at 14.75 months.									
MEANS OF 5 PLOTS:	B. 37161	31.57	16.72	88.5	5.28	116.04	B. 37161	16.25	59
	B. 34104	28.49	16.26	87.1	4.64	101.98	D. 49/41	15.72	
	D. 49/41	29.52	15.72	87.6	4.64	101.98	Co. 421	13.22	
	Co. 421	24.81	14.68	86.8	3.64	80.00	B. 34104	12.92	
	Mean:				4.55	100.00			
	Significant Difference, 20: 1:				.68	14.94			
Results of a Second Ratoon Variety Trial on Riverside Clay.									
Pln. Versailles, Field 31 V.S. Reaped 21.iii.50 at 12.00 months.									
MEANS OF 5 PLOTS:	D. 142/41	29.07	15.25	88.1	4.43	105.23	D. 142/41	16.43	60
	D. 49/41	29.80	14.70	88.4	4.38	104.04	Co. 421	14.37	
	Co. 421	24.84	15.66	88.2	3.83	90.97	D. 49/41	13.24	
	Mean:				4.21	100.00			
	Significant Difference, 20: 1:				—	—			
Results of a Second Ratoon Variety Trial on Pegassy Clay.									
Pln. Lusignan, Field L.E.E. 8. Reaped 7.xii.50 at 12.00 months.									
MEANS OF 5 PLOTS:	B. 37161	33.63	14.10	86.7	4.74	112.06	D. 158/41	17.67	61
	D. 142/41	31.16	14.40	85.5	4.49	106.15	D. 142/41	15.78	
	B. 34104	27.88	14.87	86.6	4.15	98.11	B. 37161	15.72	
	D. 158/41	29.16	14.23	87.7	4.15	98.11	B. 34104	13.43	
	Co. 421	25.92	13.97	84.8	3.62	85.58	Co. 421	13.18	
	Mean:				4.23	100.00			
	Significant Difference, 20: 1:				—	—			

SUB-SECTION E.—VARIETY PERFORMANCE SUMMARY.

Varieties in experiments during 1950 will be discussed under the following categories :—

(a) Standard Canes;

(b) Barbados Seedlings produced prior to the B.40' series;

(c) Barbados Seedlings of the B.40' and B.41' series and Demerara Seedlings of the D.1941 series;

(d) Barbados Seedlings of the B.42' and B.43' series and Demerara Seedlings of the D.1943 series;

(e) Barbados Seedlings of the B.44' series and Demerara Seedlings of the D.1944 series;

(f) Demerara Seedlings of the 1945 and 1946 series.

In discussing the varieties, those that are known to be susceptible to 'Leaf Scald' will be so described, but it will be realised from what has been said in the Introduction that degrees of resistance within varieties has not yet been determined and until this is done undue reliance cannot be placed upon what amounts to merely general observations of susceptibility.

A. Standard Canes.

B.34104 (Co. 281 x B.H. 10/12)

Trial Nos : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15; 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61.

B.34104 which now occupies over 67.4% of the Colony's acreage was used as a standard cane in all but one of the experiments reaped. Its performance was fair but there appears to be many seedlings under test which are capable of outyielding it. It has been found to be heavily infected with 'Leaf Scald' over wide areas of the Colony. It is intended to replace B.34104 as a standard cane as soon as practicable. Possibly B.37161 will be used in its stead.

B.41227 (B.35207 x P.O.J. 2878)

Trial Nos : 18, 23, 24, 28, 29, 40, 41, 43, 46, 47, 48, 56, 57, 58.

As intimated in Bulletin XVIII this cane was included as a standard in all new variety experiments. Its performance throughout 1950 was uniformly excellent. Reaped in fourteen trials it was significantly beaten only once—by B.4098 at Leonora (Trial No. 29)—and this was in an experiment where

yields were abnormally low due to adverse weather conditions and an attack of hard back beetles. Indeed in a total of 66 comparisons it was only outyielded at all four times, the varieties responsible being B.4098 (above), D.62/43 (at Sophia, Trial No. 28), B.40105 (at Lusignan, Trial No. 47 and B.44341 (at Versailles, Trial No. 23). It proved significantly superior to B.34104 in no fewer than 7 occasions and to Co. 421 four times, to B.40105 four times, to B.37172 four times and to B.4098, twice. Its juice quality appears to be satisfactory and its ratooning ability good. There seems no doubt that it is the equal of any and superior to most of the canes in categories a, b, c, d, and e of this summary and its extension on the sugar estates can be safely recommended. It has been found to be susceptible to 'Leaf Scald' but estates should have no difficulty in finding and maintaining clean stocks.

D.14/34 (Co. 281 x Diamond 10)

Co. 419 (P.O.J. 2878 x Co. 290)

Co. 421 (P.O.J. 2878 x B.3412)

All three canes occurred as standards in the older established variety trials. In general all three proved inferior to B.34104 and their use as standards will be discontinued. Co. 421 performed especially badly in trials and appears to be completely unreliable as ratoons—behaviour which contrasts strongly with the performance of this variety some years previously.

B. Barbados Seedlings prior to the B.40' Series.

Two canes of this group, B.37161 and B.37172 were tested in 1950.

B.37161 (B.3365 x B.603)

Trial Nos : 59, 61.

B.37161 completed its experimental testing in 1950. It was reaped only twice as second ratoons and outyielded all competitors in both experiments. It is now planted over a considerable acreage on estates and first reports of its performance on a commercial scale are most promising. It has been found to be slightly infected with 'Leaf Scald.'

B.37172 (P.O.J. 2878 x B.2935)

Trial Nos : 4, 22, 24, 40, 41, 48, 57.

B.37172 was fairly thoroughly tested in 1950 being harvested in seven experiments. Its performance as regards yield was fair and its juice quality satisfactory. It met B.41227 in five trials and was significantly beaten by the new standard four times and seems clearly inferior to it. So far 'Leaf Scald' has not been observed to occur in this variety.

C. Barbados Seedlings of the B.40' and B.41' Series and Demerara Seedlings of the D.1941 Series.

During 1950 this group of seedlings was further greatly reduced in number. B.41227 has been transferred to the Standard Cane category and its performance has been discussed there. B.4110 (B.3365 x P.O.J. 2878), B.40102 (B.3439 x Co. 290) and B.41211 (B.3439 x B.37252), have been discarded, both the latter on account of unsatisfactory juice, while among the Demerara seedlings only D.142/41 (B.34104 x Co. 213), and D.158/41 (Co. 421 x D.166/34), remain under test.

B.4098 (B.3439 x Co. 290)

Trial Nos : 17, 18, 19, 22, 23, 24, 29, 43, 45, 48.

For the first time since its introduction, B.4098, was tested comprehensively in 1950. It occurred in ten experiments—six plant cane trials, three first and one second ratoon trial—over a wide range of ecological areas. Its performance may be looked on as promising although inconsistent but in general it appears to be inferior to B.41227. Out of a total of six comparisons with this cane, B.4098 has proved superior only once and although this was by a significant margin, much weight cannot be placed on the result since the trial (48 E. Leonora, No. 29) was rendered unreliable by insect attack, unfavourable weather, etc. As against this B.4098 has been outyielded by B.41227 five times—twice significantly so. In addition to the trial in 48 E. Leonora, B.4098 performed best at Wales (Trial No. 22) but it yielded indifferently in 78 A.C., Cornelia Ida (Trial No. 48) and in 21 Rp. Blairmont, (Trial No. 43). Such inconsistency makes it impossible to recommend it for anything but cautious extension until it has been further tested.

B.40105 (B.3439 x Co. 290)

Trial Nos : 4, 24, 40, 41, 46, 47, 48, 56, 57, 58.

B.40105 was reaped in a total of ten experiments (twice as plants, five times as first ratoons and three times as second ratoons) in 1950. It met B.34104 on ten occasions and B.41227 on nine. Compared with B.34104 it was superior in eight comparisons and significantly so in five. On the other hand B.41227 outyielded B.40105 eight times, four times by significant margins. Thus this cane would appear to be clearly superior to B.34104 but not as good as B.41227. Nevertheless it appears well suited to certain areas in the Colony and is worthy of small scale commercial trial. Its juice quality is good and under British Guiana conditions it is a vigorous ratooner.

D.142/41 (B.34104 x Co. 213)

Trial Nos : 32, 38, 40, 44, 45, 51, 52, 54, 55, 56, 57, 58, 60, 61.

Thoroughly tested as ratoons during 1950 the position of D.142/41 is now clearly defined. In the majority of soil types it is superior to B.34104 (which it defeated in nine out of thirteen comparisons, three times significantly) but

not as good as B.41227. It possesses a rich juice and most desirable habit, but it has proved somewhat disappointing as a ratoon. It is known to be readily susceptible to 'Leaf Scald' and its further extension on estates cannot be recommended until commercial results from the present acreage have been received.

D.158/41 (Co. 421 x D.166/34)

Trial Nos : 17, 18, 19, 20, 25, 34, 36, 43, 44, 55, 61.

D.158/41 was harvested in eleven experiments in 1950 and it is disappointing to have to record that this variety failed to live up to its early promise. It appears to be unreliable as ratoons and although it will continue under test its further extension on estates is not advised.

D. Barbados Seedlings of the B.42' and B.43' Series and Demerara Seedlings of the D.1943 Series.

Experimental results during 1950 led to the discard of the majority of the seedlings under test in this group which now consists of B.4214, six seedlings of the B.43' series and six of the Demerara 1943 series. Among the canes discarded in 1950 was B.43391 which proved unsatisfactory in regard to juice quality.

B.4214 (B.3365 x Co. 290)

Trial Nos : 38, 42.

This cane which did well in 1949 performed moderately in 1950. It will be reaped in 1951 in those trials in which it has already been included.

B.4362 (B.37161 x P.O.J. 2878)

Trial Nos : 5, 9, 12, 18, 20, 21, 22, 32, 43.

B.4362 appears to be the most promising of the B.43' series under local conditions. It is characterised by satisfactory yielding ability coupled with an exceptionally rich juice. Reaped in nine experiments during 1950 it outyielded (in respect to tons sucrose per acre) B.34104 in six of them, four times by significant margins. It was however beaten, though not significamtly, by B.41227 on the only two occasions on which they met. Its juice quality as measured by pol. % cane was clearly superior to B.34104 in each of the nine trials. It is intended to make nursery distribution of this cane to estates during 1951 and at the same time to continue its testing programme. It is known to be susceptible to 'Leaf Scald' but it should be possible to build up adequate stocks of clean material.

B.4373 (B.3354 x Co. 290)

Trial No : 53.

This cane is scheduled for reaping in 4 experiments in 1951 and will be included in some new trials. Its performance in Sophia 13 W.—Trial No. 53—(its only trial to date) has been very promising.

B.43214 (B.3353 x Co. 290)

Trial Nos : 14, 53.

Reaped in two trials in 1950, B.43214 did well in both and outyielded B.34104 by a significant margin on each occasion. It is scheduled for further testing.

B.43253 (B.3439 x B.37175)

Trial Nos : 5, 9, 13, 21, 53.

B.43253 resembles B.4362 in having an exceptionally rich juice. In this respect, out of a total of 43 comparisons with other varieties, it was only thrice beaten, each time by B.4362. It is not as vigorous as the latter however and appears to be rather a weak ratooner. It will be tested further in 1951.

B.43349 (B.37227 x B.3337)

Trial No : 32.

This cane has shown sufficient promise to merit of its testing being continued.

B.43413 (M.D. 47 x Co. 290)

Trial Nos : 36, 38.

B.43413 has so far been reaped only at Sophia. It is scheduled for estate testing in 1951.

D.4/43 (D.200/36 x Diamond 10)

Trial Nos : 25, 28, 34, 37.

Tested only at Sophia so far, this variety will be included in estate trials in 1951. It is a vigorous cane with above average juice.

D.35/43 (D.14/34 x D.200/36)

Trial Nos : 34, 37.

D.40/43 (D.14/34 x D.200/36)

Trial No. : 50.

Promising performers at Sophia, D.35/43 and D.40/43 are scheduled for estate testing in 1951.

D.54/43 (Co. 421 x D.166/34)

Trial Nos : 5, 12, 14, 21, 25, 52, 53.

This is a good but inconsistent performer in variety trials. In 1951 it will be harvested only in those experiments in which it has previously been established.

D.58/43 (Co. 421 x Co. 331)

Trial Nos : 9, 13, 14, 19, 21, 25, 52.

This cane appears to be about the equal of D.54/43, although its juice quality appears slightly superior. It will be reaped in established trials in 1951.

D.62/43 (Co. 421 x Co. 331)

Trial Nos : 9, 12, 25, 28, 31, 35, 45.

As intimated in Bulletin 18, D.62/43 would seem to be the outstanding seedling of the D.1943 series, and with the exception of one trial (Ogle 39 S.I. No. 9) its performance in 1950 was excellent. It is a very vigorous seedling capable of heavy yields and its juice quality is very satisfactory. Reaped in 7 trials in 1950 it outyielded B.34104 on seven occasions five times significantly. It met B.41227 once and was superior to it although the differences in yield were never significant. It is intended to distribute nursery material of D.62/43 to estates pending the completion of its testing. Nothing is known of its susceptibility to 'Leaf Scald.'

E. Barbados Seedlings of the B.44' Series and Demerara Seedlings of the D.1944 Series.

Testing of the B.44' seedlings series during 1950 served to eliminate all but eight of these canes. Of these only two—B.44244 (B.35207 x B.34104) and B.44341 (B.40272 x Co. 290) appear likely to compete with B.41227 but further data is needed to assess the position of the following B.4448, B.4466, B.44111, B.44165, B.44182 and B.44279. Of the Demerara 1944 series only four—D.3/44, D.7/44, D.10/44 and D.27/44, remain under test, but none of these is looked on as outstanding. The following brief notes summarise the information available on the more promising varieties within this group.

B.4448 (B.3439 x Co. 290)

Trial Nos : 17, 23, 39.

This cane has done very well in trials at Sophia and Enmore (Trial No. 17) but proved a complete failure in Trial No. 23 at Versailles and was moderate in the variety sorting trial on pegasse (Trial No. 71 DeK., De Kinderen). It appears to have a good juice but requires further testing in order to define its capabilities.

B.4466 (B.37161 x B.3337)

Trial Nos. : Variety Sorting Trials.

B.4466 did very well in the pegasse sorting trial where it outyielded all competitors. It appears to less advantage in its only trial on clay at Sophia, but will be included in further experiments.

B.44111 (B.40272 x Co. 290)

Trial Nos : 17, 23.

In contrast to B.4466, B.44111 appears well suited to clay soils and has done very well in some of its trials on this soil type. It yielded poorly on pegassy clay.

B.44165 (B.3354 x B.34104)

Trial Nos : 6, 17, 23, 39.

B.44182 (B.3354 x B.38270)

Trial Nos : Variety Sorting Trials. Sophia, 15 W. "A" and DeKinderen 71 DeK.

B.44279 (B.37161 x B.3337)

Trial Nos : Variety Sorting Trial. Sophia, 15 W. "A."

These three varieties have shown sufficient promise to merit further testing.

B.44244 (B.35207 x B.34104)

Trial Nos : 17, 23.

This cane topped the list in both sorting trials as plants and was second only to B.44341 as first ratoons in the sorting trial in 15W "A" Sophia. On its two appearances in estate trials it did moderately well.

B.44341 (B.40272 x Co. 290)

Trial Nos : Variety Sorting Trials.

Of the B.44' series, B.44341 may prove to be the variety best suited to local conditions. It was harvested in four trials in 1950 and apart from the sorting trial on pegassy clay at 71 DeK., its performance was good and consistent. In the sorting trial at 71 DeK., De Kinderen on the other hand it was outyielded by all competitors and hence would appear ill suited to pegasse. It appears to have a comparatively rich juice.

F. Demerara Seedlings of the D.1945 and D.1946 Series.

A total of 103 (D.1945) and 19 (D.1946) of these canes were reaped in preliminary experiments at Sophia during 1950. Only two require mention at this stage. These are D.87 45 (B.34104 x Co. 331) and D.128 45 (Co. 281 x D.200 36). The former appeared in three trials (Nos. 1, 11 and 16) and was significantly superior to B.34104 in all. D.128 45 was reaped in trial No. 10 and topped the list.

SUB-SECTION G.—GENERAL SUMMARY AND RECOMMENDATIONS.

Table VI compares the performance of all canes which have been reaped in experiments for at least two cycles with B.34104. A minimum of five experiments has been chosen as qualification for inclusion in the table. Table VII compares for some of the more important varieties, certain data indicative of juice quality.

TABLE VI.—**General Mean Sucrose Yields in Tons per Acre from all Experiments.**

Variety.	Plants.		First Ratoons.		Second Ratoons.		Total Yield.	Total Yield, B. 34104 = 100.00.
	Yield.	No. of Expts.	Yield.	No. of Expts.	Yield.	No. of Expts.		
Three Crops, Plants, First and Second Ratoons.								
B. 41227	**7.00**	**13**	**6.36**	**10**	**7.39**	**3**	**20.75**	**141.35**
B. 40105	6.92	9	6.42	6	6.84	3	20.18	137.47
B. 37172	6.27	6	4.38	2	6.72	1	17.37	118.32
D. 142/41	6.46	14	6.16	13	4.79	8	17.32	117.98
D. 54/43	6.75	7	5.29	3	5.15	2	17.19	117.10
D. 158/41	6.59	12	5.60	8	4.99	3	17.18	117.03
D. 58/43	6.97	8	5.36	3	4.55	2	16.88	114.99
B. 37161	6.49	10	4.99	9	4.73	5	16.21	110.42
B. 43253	5.89	6	5.54	1	4.64	1	16.07	109.47
Co. 421	6.35	22	5.16	19	4.12	11	15.63	106.47
D. 49/41	6.02	16	5.14	14	4.37	4	15.53	105.79
B. 34104	**5.52**	**90**	**4.80**	**63**	**4.36**	**31**	**14.68**	**100.00**
D. 14/34	5.40	30	4.74	21	4.12	9	14.26	97.14
Co. 419	5.31	5	4.87	4	3.41	2	13.59	92.57
Two Crops, Plants and First Ratoons.								
B. 41227	**7.00**	**13**	**6.36**	**10**	**—**	**—**	**13.36**	**129.46**
D. 62/43	6.76	9	6.39	6	—	—	13.15	127.42
D. 4/43	6.30	4	5.50	4	—	—	11.80	114.34
B. 44244	6.55	4	5.17	1	—	—	11.72	113.57
B. 4362	6.61	8	4.89	2	—	—	11.50	111.43
B. 4098	6.37	10	5.01	4	—	—	11.38	110.27
B. 44341	5.91	4	5.17	1	—	—	11.08	107.36
B. 44111	5.78	5	5.15	1	—	—	10.93	105.91
B. 4448	5.44	4	5.10	1	—	—	10.54	102.13
B. 34104	**5.52**	**90**	**4.89**	**63**	**—**	**—**	**10.32**	**100.00**
B. 44165	5.59	4	3.90	1	—	—	9.49	91.96

TABLE VII.—**The Quality of the Most Promising Seedlings as Compared with B. 34104.**

Variety.	Pol. % Cane.		Juice Purity.		Fibre % Cane.	
	% of B. 34104.	No. of Comparisons.	% of B. 34104.	No. of Comparisons.	% of B. 34104.	No. of Comparisons.
D. 14/34	105.32	60	100.94	60	—	—
D. 49/41	103.23	34	99.87	34	—	—
D. 142/41	107.57	35	100.80	35	—	—
D. 158/41	102.53	23	98.36	23	—	—
D. 4/43	107.05	8	99.47	8	—	—
D. 40/43	108.70	3	99.82	3	—	—
D. 54/43	101.71	12	98.66	12	—	—
D. 58/43	105.00	13	98.09	13	—	—
D. 62/43	104.92	15	99.57	15	—	—
D. 3/44	99.07	4	99.02	4	—	—
D. 7/44	94.78	4	97.74	4	—	—
B. 37161	100.33	24	100.14	24	—	—
B. 37172	103.35	9	101.19	9	—	—
B. 4098	102.91	14	98.55	14	—	—
B. 40105	105.52	18	99.35	18	—	—
B. 41227	102.64	26	99.79	26	—	—
B. 4214	102.53	4	97.32	4	—	—
B. 4362	112.76	10	100.53	10	—	—
B. 4373	100.22	3	95.85	3	—	—
B. 43214	101.57	4	98.45	4	—	—
B. 43253	112.28	8	100.72	8	—	—
B. 43413	106.67	4	98.66	4	—	—
B. 4411	105.50	3	94.93	3	—	—
B. 4448	105.76	5	97.38	5	—	—
B. 4466	100.87	3	95.88	3	—	—
B. 44111	103.10	6	98.92	6	—	—
B. 44165	101.68	5	100.83	5	—	—
B. 44182	102.87	3	97.59	3	—	—
B. 44244	100.82	5	95.96	5	—	—
B. 44341	107.37	5	95.90	5	—	—
Co. 419	99.93	11	97.84	11	—	—
Co. 421	98.09	52	98.21	52	—	—
B. 34104	**100.00**	—	**100.00**	—	—	—

Table VI showing the General Mean Sucrose Yields for canes reaped in experiments emphasises the merits of the new control cane B.41227. In both tables over a wide range of comparisons it heads the list. In the three crop table B.40105 is close as is D.62/43 in the two crop table, but apart from these varieties (both known to be very good canes) the margin of superiority of B.41227 is considerable. Table VII which indicates the juice quality of the new varieties, shows both B.4362 and B.43253 to be canes of extraordinary richness. Also definitely above average in this respect are the varieties D.40/43, D.142/41 and B.44341. Satisfactory juices are indicated for the varieties B.40105, B.41227 and D.62/43 while B.37161 appears to be about equal to B.34104 in juice quality.

Planting recommendations for 1951 are based solely on the performance of varieties in experiments during 1950 as well as on consideration of the first results of commercial reapings of the newer canes. It is not possible at present to take 'Leaf Scald' resistance into account in framing programmes of extension and it must be understood that the recommended plantings should be made only of material which is known to be clean of the disease. Should such sanitary precautions prove inefficient as control measures and should experiments which are now in progress provide a reliable method of determining resistance, it will be necessary to review the variety planting programme in relation to these findings. Until then it is suggested that the following proposals be used as a rough guide.

In addition to B.34104 and other older varieties, most estates have at the time of writing, nursery material of the following canes :—

D.49/41	(D.338/33 x Co.213)
D.142/41	(B.34104 x Co.213)
D.158/41	(Co.421 x D.166/34)
B.37161	(B.3365 x B.603)
**B.40105*	(B.3439 x Co.290)
B.4098	(B.3439 x Co.290)
B.41227	(B.35207 x P.O.J.2878)

Of these the first three should not be further planted. D.49/41 is definitely inferior to the newer varieties while most estates have already sufficient acreage of D.142/41 to ensure it having a fair test under estate conditions. Further extension of D.158/41 would be unwise in view of its unsatisfactory ratoon performance.

Of the remainder the performance of B.41227 in experiments leaves no doubt as to its merits. It seems ideally suited to clay soils and appears likely to do particularly well in Berbice. It does not appear to be as well suited to pegasse and its extension there should be more cautious.

B.37161 has been reaped over a fair acreage by estates in 1950 and has proved that it is likely to be a commercial cane of some importance. It appears to do well on all soil types and is particularly suitable for planting on pegasse and riverside clays.

B.4098 is present in small amounts on most estates. It should be cautiously extended pending the completion of its testing. It appears to be a rather inconsistent variety. B.40105 has not yet been widely distributed but is reported to be doing well on the East Coast Demerara. It should be given a small scale commercial trial.

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* Not yet generally distributed but present on a few estates.

As an approximate guide to planting programmes for 1951 the following are suggested, but it should be understood that these figures may be modified as experimental results come in from time to time. Figures given refer strictly to acreage to be planted during the year.

	Soil Type.			
Variety.	*Berbice Clay.*	*East Coast Clay.*	*Riverside Clay.*	*Pegasse.*
B.41227	50	50	45	10
B.37161	25	40	45	50
B.34104	20	5	5	30
B.4098 } B.40105 }	5	5	5	5

MANURIAL TRIALS.

As was the case in 1949, all manurial trials harvested in 1950 involved the use of phosphatic fertilizers. The results of eight such trials are here presented.

A. Trials With Ammonium Phosphate and Superphosphate of Lime on Pegassy Clay.

(A1) *Field 76 R.P., Pln. Providence, 6 x 6 Latin Square.*

(A2) „ *76 R.P.,* „ „ *4 x 4* „ „

Trial A was designed primarily to test the effectiveness of Ammonium Phosphate as a phosphatic manure on this soil type. A comparison between this fertilizer and equivalent dressings of superphosphate of lime was also made and, in addition the effect of placement of the fertilizers was investigated. Three fertilizer treatments were involved as follows:

(1) 2 Cwt/acre Sulphate of Ammonia.

(2) 2 Cwt/acre Sulphate of Ammonia + 6 cwt/acre superphosphate of lime.

*(3) 0.82 Cwt/acre Sulphate of Ammonia + 2.26 cwt/acre Ammonium phosphate.

and each dressing was applied both by the standard estate method—spread by hand along the cane row—and by a 'placement' method in which the fertilizer was buried in a shallow gutter closely adjacent to the row.

The tabulated results for this trial show that there was no significant difference between treatment yields, although there appears to be a slight trend in favour of the 'placement' method. It is likely that the nitrogen dressing used in this experiment was inadequate and this may have been the factor limiting yields. Heavy rains which followed closely upon the application of the manures may have exaggerated this by causing leaching and this would also tend to benefit the 'placement' application.

*Dressings equivalent in Nitrogen and P_2O_5 content to 2 cwt/acre Sulphate of Ammonia and 6 cwt/acre Superphosphate of Lime.

TABLE I.—**Effect of Phosphatic Manures on Pegassy Clay.**

Treatments per Acre.	Providence, Field 76 R.P. B. 34104, Plants. Mean Yields in	
	Tons Cane/Acre.	Tons Sucrose/Acre.
0.82 cwt. S.A. + 2.26 cwt. A.P. Estate Method	23.71	3.45
0.82 „ „ + 2.26 „ „ Placement	24.19	3.36
2 „ „ Estate Method	22.96	3.46
2 „ „ Placement	23.12	3.25
2 „ „ + 6 cwt. S.P. Estate Method	22.56	3.22
2 „ „ + 6 cwt. „ Placement	24.02	3.27
Mean :	23.43	3.33
Sig. Diff., 20:1:	—	—

Trial A2 which was established alongside of A1 was laid out to test the effect of graded dressings of Ammonium phosphate used in conjunction with fairly heavy applications of Sulphate of Ammonia as compared with the standard estate dressing of 2 cwt acre Sulphate of Ammonia. The four treatments used are as tabulated and it will be seen that a dressing of 3 cwt acre Sulphate of Ammonia plus 6 cwt acre Ammonium Phosphate has significantly outyielded the control. Unfortunately this trial was not designed in such a way that the effects of the phosphatic fertilizer and Sulphate of Ammonia could be separately evaluated and it is possible that the only effect has been a simple Nitrogen response.

TABLE II.—**Effect of Phosphatic Manures on Pegassy Clay.**

Treatments per Acre.	Providence, Field 76 R.P. B. 34104, Plants. Mean Yields in	
	Tons Cane/Acre.	Tons Sucrose/Acre.
Control 2 cwt. S.A.	26.49	3.87
3 cwt. A.P. + 1½ cwt. S.A.	22.72	3.27
6 cwt. „ + 3 cwt. „	31.17	4.72
9 cwt. „ + 4½ cwt. „	31.06	4.28
Mean :	27.86	4.03
Sig. Diff., 20:1:	—	.76

B. Trials With Calcium Superphosphate and Ammonium Sulphate.

(B1) *Field 21 Rp. Pln. Blairmont, 4 x 6 Randomised Block.*

(B2) „ *48 B.L.* „ „ „ *4 x 6* „ „

Indications that response to phosphatic fertilisation of ratoons occurred on certain soil types in British Guiana was reported in Sugar Bulletin 18 (pp. 28—31). The two trials in this category were designed as confirmatory experiments to test these indications. Four fertilizer treatments were employed as shown in the tables and the trials were established in two fields of first ratoons which had received standard estate manurial dressings (Sulphate of Ammonia only) as plants.

The trial in 21 Rp. was established on heavy clay soil and showed no significant difference between treatment yields. However the best results were obtained from 4 cwt/acre Sulphate of Ammonia and 6 cwt/acre Superphosphate of lime dressing which is in agreement with the results reported in Bulletin 18. The soil in 48 B.L. was lighter in texture and overlies a sandy layer. In this field the experimental yields were abnormally low, but significant responses to treatment were obtained. The standard estate ratoon dressing of 4 cwt/acre Sulphate of Ammonia was significantly outyielded by both treatments involving 10 cwt/acre Sulphate of Ammonia. The addition of Superphosphate however, did not exercise a significant effect upon yield although the best results were obtained when 10 cwt/acre Sulphate of Ammonia was combined with 10 cwt/acre Superphosphate.

Table III.—**Effect of Phosphates and Sulphate of Ammonia on Very Heavy Clay.**

Treatments per Acre.	Blairmont, Field 21 Rp. D. 14/34, 1st Ratoons. Mean Yields in	
	Tons Cane/Acre.	Tons Sucrose/Acre.
Ammonium Sulphate, 4 cwt. / Superphosphate, 6 cwt.	32.13	5.23
Ammonium Sulphate, 10 cwt. / Superphosphate, 10 cwt.	28.48	4.83
Ammonium Sulphate, 4 cwt.	29.62	4.80
Ammonium Sulphate 10 cwt.	28.69	4.74
Mean :	29.73	4.90
Sig. Diff., 20:1:	—	—

TABLE IV.—Effect of Phosphates and Sulphate of Ammonia on Berbice Frontland Clay.

Treatments per Acre.	Blairmont, Field 48 B.L. D. 14/34, 2nd Ratoons. Mean Yields in	
	Tons Cane/Acre.	Tons Sucrose/Acre
Ammonium Sulphate, 10 cwt. / Superphosphate, 10 cwt.	20.57	3.19
Ammonium Sulphate, 10 cwt.	18.26	2.99
Ammonium Sulphate, 4 cwt. / Superphosphate, 6 cwt.	14.15	2.32
Ammonium Sulphate, 4 cwt.	13.41	2.05
Mean:	16.60	2.64
Sig. Diff., 20:1:	—	.69

C. TRIALS TO TEST RESIDUAL EFFECTS OF PHOSPHATIC FERTILIZERS.

(C1) *Field 25 Lot 22 A, Pln. Rose Hall.* (6, 12, 18).

(C2) „ *25* „ *22 A,* „ „ „

Basic Slag applications at the indicated rates were made to these trials as plants. As first ratoons they received only the standard estate dressing of 4 cwt/acre Sulphate of Ammonia to all plots. As can be seen from the tabulated results the heavy applications of basic slag to the plants did not significantly influence yield as ratoons.

TABLE V.—Effect of a Phosphatic Manure on Flood-fallowed Berbice Frontland Clay.

Treatments per Acre.	Mean Yields in Tons Cane per Acre. Rose Hall, Field 25, Lot 22 A. B. 34104.		
	Plants.	1st Ratoons.	Total for 2 Crops.
		Experiment "A."	
Basic Slag, 6 cwt.	44.80	47.18	91.98
„ „ 12 „	51.74	46.98	98.72
„ „ 18 „	44.91	47.31	92.22
Mean:	47.15	47.16	

Differences not Statistically Significant.

TABLE VI.—Effect of a Phosphatic Manure and Ammonium Sulphate on Berbice Frontland Clay.

Treatments per Acre.	Mean Yields in Tons Cane per Acre. Rose Hall, Field 25, Lot 22 A. B. 34104.		
	Plants.	1st Ratoons.	Total for 2 Crops.
		Experiment "B."	
2 Cwt. Amm. Sulph.,	45.54	45.60	91.14
4 „ „ „ and 6 cwt. Basic Slag.	52.48	45.09	97.57
8 „ „ „ „ 12 „ „ Slag.	43.14	45.34	93.48
Mean:	43.72	45.34	

Differences not Statistically Significant.

(C3) *Field 108 G.D. Pln. Diamond, Pegassy Clay.*

(C4) „ *108 G.D.* „ „ *Intermediate Pegassy Clay.*

The results of these trials as plants and first ratoons have been reported in Bulletins 17 and 18. The results for second ratoons are similar and show that neither the phosphatic fertilizer nor the proprietory compound 'Limax' has exercised any residual effect upon yields.

TABLE VII.—Effect of Phosphatic Manuring and Liming Materials on Pegassy Clay.

Treatments per Acre.	Mean Yields in Tons Cane per Acre. Diamond, Field 108 G.D. (North End). Co. 419.			
	Plants.	1st Ratoons.	2nd Ratoons.	Total for 3 Crops.
Limax 20 Cwt.	49.52	39.44	29.88	188.84
Limestone 20 „	47.51	36.28	27.79	111.58
Limestone 20 „ and Rock Phosphate 6 „	50.91	40.08	26.48	117.47
Mean:	49.31	38.60	28.05	

Differences not Statistically Significant.

TABLE VIII.—**Effect of Phosphatic Manuring and Liming Materials on Intermediate Pegassy Clay.**

Treatments per Acre.	Mean Yields in Tons Cane per Acre.			
	Diamond, Field 108 G.D.(South End).			
	B. 34104.			
	Plants.	1st Ratoons.	2nd Ratoons.	Total for 3 Crops.
Limax 10 Cwt.	33.49	34.89	34.28	102.66
Limestone 10 „	32.18	32.11	31.43	95.72
Limestone 10 „ and Rock Phosphate 6 „	33.17	35.40	31.12	99.69
Mean:	32.95	34.13	32.28	
Differences not Statistically Significant.				

SUB-SECTION D.—SUMMARY.

The results of the 1950 series of Manurial trials indicate:—

(1) Ammonium phosphate does not exercise a beneficial effect on yield on plants on pegassy clay and does not differ in effectiveness as a phosphatic fertilizer from Superphosphate of Lime.

(2) Superphosphate of Lime applied both with standard estate dressings of Sulphate of Ammonia and Sulphate of Ammonia at a high level (10 cwt/acre) has no influence on the yield of first ratoons on the two soil types on which experiments were carried out.

(3) Applications of Sulphate of Ammonia in excess of the recommended standard dressing of 4 cwt/acre may increase the yields of first ratoon canes.

(4) No evidence can be obtained that phosphatic fertilizers applied to plants exercise any beneficial residual effects on subsequent ratoons. This is true also of the proprietory compound 'Limax.'

	Estate	P.O.J. 2878	D. 14/34	Co. 421	B. 34104	Co. 419	Diamond 10	D. 166/34	D. 200/36	Mixed	D.
Berbice.	Skeldon	—	324.90	54.40	3,052.70	616.90	—	—	—	—	
	Port Mourant	20.90	68.50	55.60	4,668.10	14.50	—	—	—	3.90	
	Albion	2.70	813.30	50.20	4,188.70	—	—	—	—	2.00	
	Rose Hall	16.50	765.10	116.70	4,605.50	27.80	—	—	—	1.40	
	Lochaber	191.00	2.00	10.00	212.00	5.00	18.00	—	—	—	
	Providence "B"	—	518.20	782.90	380.10	23.00	25.00	—	29.50	—	
	Blairmont	1.00	896.10	625.80	504.00	43.00	81.00	4.00	19.00	17.20	
	Bath	—	508.20	456.10	208.70	394.00	—	—	—	.30	
	Total Dutch	232.10	3,896.30	2,241.70	17,819.80	1,124.20	124.00	4.00	48.50	24.80	
	Total English	243.94	4,095.01	2,356.03	18,728.61	1,181.53	130.32	4.20	50.97	26.06	
	%	.86	14.45	8.31	66.08	4.17	.46	.01	.18	.09	
East Demerara.	Enmore	10.00	293.70	35.00	3,928.00	—	—	—	11.00	—	
	Lusignan	—	708.00	—	2,831.10	—	—	—	25.60	—	
	L.B.I.	—	1,234.75	71.00	1,255.25	198.00	117.00	—	—	—	
	Ogle	—	452.60	—	1,604.40	—	62.40	—	25.00	—	
	Total Dutch	10.00	2,689.05	106.00	9,618.75	198.00	179.40	—	61.20	—	
	Total English	10.51	2,826.19	111.41	10,109.31	208.10	188.55	—	64.32	—	
	%	.10	18.80	.70	67.30	1.40	1.30	—	.40	—	
Demerara River Banks.	Ruimveldt	—	187.50	—	299.00	—	24.50	—	—	—	
	Houston	—	162.60	—	690.94	—	19.00	—	—	—	
	Diamond	—	953.50	—	232.00	—	190.00	—	—	—	
	Wales	—	250.50	—	3,018.90	252.50	—	—	—	—	
	Versailles	32.30	393.10	—	1,631.90	—	52.80	—	—	2.00	
	Total Dutch	32.30	1,947.20	—	9,872.74	252.50	286.30	—	—	2.00	
	Total English	33.95	2,046.51	—	10,376.25	265.38	300.90	—	—	2.10	
	%	.21	12.90	—	65.41	1.67	1.90	—	—	.02	
West Demerara.	Leonora	—	674.00	—	2,763.80	10.00	—	—	—	—	
	Uitvlugt	—	801.75	—	4,979.85	236.45	—	—	—	13.50	
	Total Dutch	—	1,475.75	—	7,743.65	246.45	—	—	—	13.50	
	Total English	—	1,551.01	—	8,138.53	259.02	—	—	—	14.19	
	%	—	14.06	—	73.76	2.35	—	—	—	.13	
	Colony English	288.40	10,518.72	2,467.44	47,352.75	1,914.03	619.77	4.20	115.29	42.35	
	%	.41	14.97	3.31	67.38	2.72	.88	.01	.16	.06	

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XVI.

By

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VARIETAL COMPOSITION OF THE 1951 HARVESTS.

The tables summarising the variety position for 1951 have been prepared along the same lines as those published in Bulletins 17 and 18. They contain data abstracted from returns kindly supplied by the Sugar Estates and refer only to estate-grown canes which constitute approximately 98% of the total acreage of the Colony. Table I shows the varietal position on an estate basis, while Table II summarises this information for the Colony as a whole. Table III shows the acreage occupied by the varieties which make up the 'other canes' category in Table II. Table IV indicates the trend in varietal planting over the last 8 years.

TABLE I (facing this page—inset).

TABLE II.—**Percentage Distribution of the Varieties to be Reaped in 1951.**

Variety.	Total English Acres in the Colony.		Percentage.			
			In West Demerara.	Along Demerara River Banks.	In East Demerara.	In Berbice.
B. 34104	47,352.75	(67.4)	17.2	21.9	21.3	39.6
D. 14/34	10,518.72	(15.0)	14.7	19.5	26.9	38.9
B. 37161	2,640.90	(3.8)	16.1	58.3	12.0	13.6
B. 41227	2,528.02	(3.6)	11.6	35.2	23.5	29.7
Co. 421	2,467.44	(3.5)	—	—	4.5	95.5
Co. 419	1,914.03	(2.7)	13.5	13.9	10.9	61.7
D. 142/41	976.06	(1.4)	31.7	35.6	17.9	14.8
Diamond 10	619.77	(.9)	—	48.6	30.4	21.0
P.O.J. 2878	288.40	(.4)	—	11.8	3.6	84.6
Other Canes	964.69	(1.3)	5.8	6.6	50.8	36.8
	70,270.78	(100.0%)				

TABLE III.—Acreages of the Varieties Constituting "Other Canes".

Variety.	English Acres.		Variety.	English Acres.		Variety.	English Acres.	
	1950	1951		1950	1951		1950	1951
D. 49/30	—	—	D. 49/41	68	181	B. 4098	9	178
D. 419/33	—	—	D. 158/41	2	82	B. 40102	72	133
D. 166/34	20	4	Diamond 9	21	—	B. 40105	35	107
D. 25/38	131	56	„ 201	112	—	B. 41211	7	7
D. 26/39	37	29	S.C. 12/4	—	—	New Seed-		
D. 21/49	6	4	B. 37172	3	6	lings	150	5

TABLE IV.—Comparison of Areas Under Various Canes in British Guiana, 1944-1951.

Variety.	Per Cent of Total Areas in the Colony.							
	1944	1945	1946	1947	1948	1949	1950	1951
Diamond 10	25.5	26.7	25.4	21.6	14.4	8.4	3.1	0.9
P.O.J. 2878	65.1	54.8	40.4	27.6	13.6	6.9	1.6	0.4
D. 166/34	2.2	2.2	1.6	1.0	0.5	—	—	—
Co. 419	3.0	4.9	6.5	7.7	8.2	6.8	4.5	2.7
Co. 421	1.6	6.3	15.1	19.4	19.3	14.2	8.5	3.5
D. 14/34	—	2.7	6.4	11.3	17.4	20.6	20.2	15.0
B. 34104	—	—	1.6	7.6	22.6	39.8	58.4	67.4
D. 200/36	—	—	—	1.5	1.9	1.7	0.7	—
B. 37161	—	—	—	—	—	—	1.4	3.6
B. 41227	—	—	—	—	—	—	0.3	3.8
D. 142/41	—	—	—	—	—	—	0.2	1.4
Other Canes	2.6	2.4	3.0	2.3	2.1	1.6	1.1	1.3

It will be seen from the tabulated data that the variety situation in 1951 is dominated by B. 34104. This cane is the only one of the major commercial varieties of 1950 which has increased its acreage in 1951. It now occupies 67.4% of the total acreage while its nearest rival, D. 14/34, is confined to a mere 15%.

The varieties D. 14/34, Co. 419 and Co. 421, all show considerable reductions in percentage acreage relative to 1950. Co. 421 is no longer being planted and may be expected to disappear from the tables in the near future. D. 14/34 and Co. 419 are still capable of fair performances and may persist as varieties of minor importance for a few more years.

The two standard canes of the Industry in the early forties—P.O.J. 2878 and Diamond 10—no longer occupy a significant area and it is unlikely that they will be grown at all in the next year or two.

The presence of significant acreages of some of the newer seedlings suggests that the dominance of B. 34104 may be of short duration. The varieties

B. 37161 and B. 41227 each occupy more than 2,500 acres at the end of 1950 while D. 142/41 has been planted over close on 1,000 acres. The discovery that 'leaf scald' is particularly widespread in the susceptible B. 34104 will undoubtedly curtail the planting of this cane in the new year, while the fact that, so far as is known, both B. 37161 and B. 41227 are relatively free of the disease is likely to encourage their very rapid spread.

There has been a continued welcome increase in the total area under cane from 67,062.25 acres at the end of 1949 to 70,270.78 at the end of 1950.

CYCLE AGE OF THE CROPS.

Table V shows that there has been no outstanding change in the planting position. The area under first, second and third ratoons has increased slightly but there has been a slight drop in the plant cane figure.

TABLE V.—**Cycle Age of the Crops, 1948—1951.**

Category.	Percentages in				Category.	Percentages in			
	1948	1949	1950	1951		1948	1949	1950	1951
Plants	31.3	31.2	33.1	28.8	3rd Ratoons	14.3	15.2	12.6	15.1
1st Ratoons	26.1	26.5	27.4	28.2	4th Ratoons	2.5	2.0	3.1	3.0
2nd Ratoons	24.5	24.8	23.3	24.4	5th Ratoons	1.3	0.3	0.5	0.5

COMMERCIAL YIELDS.

The Tables showing the yields of varieties under estate conditions have once more been drawn up on a regional basis. The estates comprising the four categories are as follows:—

East Coast Demerara (Table VI A)— Plns. Ogle, La Bonne Intention, Lusignan and Enmore;

West Coast Demerara (Table VI B)— Plns. Uitvlugt *cum annexis* and Leonora;

Demerara River Banks (Table VI C)— Plns. Diamond *cum annexis* (including Peter's Hall, Providence and Farm), Ruimveldt, Houston, Versailles, Schoon Ord and Wales ;

Berbice (Table VI D)— Plns. Blairmont, Bath, Providence, Rose Hall, Albion, Port Mourant and Skeldon.

The data contained in the Tables VI A, B, C and D is summarised for the whole Colony in Table VI E. Undue importance should not be attached to the returns from small acreages and an arbitrary standard of 100 acres has been selected as the minimum for which performance data can be considered at all reliable.

TABLE VI c.—Weighted Mean Commercial Yields along Demerara River Banks, 1950.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*		
B. 37161	482.0	14.02	83.93	—	4.20
B. 34104	3,429.5	14.42	84.63	13.71	3.36
D. 14/34	697.8	14.97	85.06	13.94	3.24
Diamond 10	237.6	13.36	80.55	13.00	2.38
		Under 100	*Acres.*		
D. 26/39	3.0	15.38	86.90	—	3.67
B. 41227	28.0	14.41	84.19	—	3.47
D. 49/41	6.0	14.81	85.05	—	3.16
D. 142/41	26.4	14.70	83.38	—	3.11
P.O.J. 2878	12.3	15.75	84.38	—	2.44
		First 100 Acres	*Ratoons. and over.*		
Co. 419	102.0	13.91	83.67	—	3.04
D. 14/34	1,049.7	15.49	86.05	14.57	2.90
B. 34104	3,356.9	14.37	84.69	14.40	2.90
Diamond 10	316.9	15.47	84.58	13.35	2.57
		Under 100	*Acres.*		
D. 200/36	26.0	17.46	88.20	—	3.81
B. 37161	17.5	14.98	84.63	—	3.54
P.O.J. 2878	35.5	15.28	83.43	—	2.87
Co. 421	67.0	14.85	83.68	—	2.20
Diamond 201	51.0	16.19	86.49	—	2.18
D. 21/40	4.0	14.80	84.57	—	2.01
		Second 100 Acres	*Ratoons. and over.*		
D. 200/36	195.0	14.77	85.40	—	3.00
B. 34104	2,466.0	14.39	84.60	14.71	2.60
Co. 419	408.8	13.81	82.90	—	2.57
Diamond 10	401.4	14.40	84.98	13.00	2.42
D. 14/34	252.2	14.42	83.89	—	1.97
Co. 421	139.8	13.98	82.84	—	1.81
		Under 100	*Acres.*		
Diamond 201	48.0	15.74	87.50	—	2.77
Mixed	6.3	16.36	84.78	—	2.69
Diamond 9	20.0	14.99	85.13	—	2.15
D. 166/34	4.7	14.57	82.34	—	1.69
D. 21/40	4.0	13.77	80.06	—	1.26
		Third 100 Acres	*Ratoons. and over.*		
Diamond 10	545.4	14.65	84.31	13.00	2.30
B. 34104	138.3	14.58	84.13	14.20	2.11
Co. 421	270.7	13.35	84.02	—	1.80
		Under 100	*Acres.*		
Co. 419	55.5	14.73	84.06	13.80	2.62
D. 200/36	4.0	13.18	81.64	—	2.03
D. 25/38	0.5	12.81	82.06	—	2.00
Diamond 201	7.3	14.64	83.02	—	1.96
D. 14/34	57.4	13.99	83.73	—	1.96
P.O.J. 2878	20.7	14.21	82.62	—	1.77
		Fourth 100 Acres	*Ratoons. and over.*		
Diamond 10	129.7	15.67	84.51	13.00	1.80
		Under 100	*Acres.*		
Co. 421	17.0	14.49	84.44	—	2.31
B. 34104	9.0	—	—	—	1.50

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VI d.—Weighted Mean Commercial Yields in Berbice, 1950.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*		
D. 14/34	984.2	15.51	84.51	—	4.54
B. 34104	4,893.8	14.75	84.51	—	4.03
B. 37161	169.3	13.41	80.82	—	4.01
Co. 421	211.8	13.01	80.12	—	3.58
Co. 419	232.4	13.17	74.91	—	3.11
		Under 100	*Acres.*		
Mixed	7.0	14.99	84.20	—	6.93
B. 37172	2.3	12.58	79.66	—	4.78
B. 41227	14.0	14.30	84.37	—	3.82
B. 41211	6.3	12.08	77.90	—	3.78
D. 142/41	1.3	14.23	85.49	—	3.16
P.O.J. 2878	1.0	—	—	—	2.98
D. 166/34	4.0	13.49	81.20	—	2.50
D. 158/41	0.2	16.78	86.05	—	2.25
		First 100 Acres	*Ratoons. and over.*		
B. 34104	3,915.9	15.01	84.05	—	3.86
D. 14/34	577.6	14.92	83.87	—	3.56
Co. 421	1,198.5	13.43	79.80	—	3.51
Co. 419	178.0	13.17	78.21	—	2.90
		Under 100	*Acres.*		
B. 37161	11.0	14.11	80.51	—	4.33
Mixed	4.0	13.90	84.76	—	4.14
B. 41211	0.7	16.05	84.90	—	3.14
D. 25/38	48.0	14.12	80.46	—	3.10
B. 41227	2.1	—	—	—	2.86
B. 37172	0.5	13.22	80.10	—	1.80
		Second 100 Acres	*Ratoons. and over.*		
B. 34104	2,964.3	15.11	84.29	—	3.49
Co. 419	429.6	13.91	81.23	—	3.21
D. 14/34	1,632.2	15.17	83.70	—	3.15
Co. 421	842.3	14.03	81.09	—	2.58
Diamond 10	106.0	12.65	77.26	—	2.31
		Under 100	*Acres.*		
B. 37161	0.3	14.37	81.90	—	5.33
Mixed	17.0	14.09	84.84	—	3.40
P.O.J. 2878	20.9	15.96	86.32	—	3.03
D. 200/36	39.5	13.82	81.04	—	2.98
D. 25/38	4.5	12.86	78.39	—	2.75
		Third 100 Acres	*Ratoons. and over.*		
B. 34104	1,329.6	15.22	84.42	—	3.18
D. 14/34	1,185.2	14.54	82.60	—	2.84
Co. 419	427.3	13.18	78.82	—	2.83
Co. 421	1,234.8	13.68	81.59	—	2.66
P.O.J. 2878	185.4	14.25	82.99	—	2.21
		Under 100	*Acres.*		
Diamond 201	0.2	12.64	77.67	—	3.64
D. 200/36	44.7	15.81	83.48	—	2.67
D. 25/38	73.0	12.78	80.28	—	2.45
Mixed	5.0	—	—	—	2.23
D. 21/40	1.2	13.31	79.06	—	2.18
Diamond 10	75.8	15.53	85.33	—	2.11
D. 166/34	8.0	13.97	79.41	—	2.03
		Fourth 100 Acres	*Ratoons. and over.*		
B. 34104	154.0	13.01	82.50	—	3.16
Co. 419	224.9	14.09	81.11	—	2.99
Co. 421	414.8	13.63	81.12	—	2.83
D. 14/34	220.1	14.53	82.11	—	2.28
		Under 100	*Acres.*		
D. 200/36	9.0	12.15	78.95	—	2.57
P.O.J. 2878	90.3	—	—	—	2.49
Diamond 10	10.0	—	—	—	1.54
		Fifth 100 Acres	*Ratoons. and over.*		
Co. 421	100.2	13.56	82.23	—	2.32
		Under 100	*Acres.*		
B. 34104	53.6	15.59	83.06	—	3.02
Co. 419	5.0	15.03	81.68	—	2.60
D. 166/34	2.8	—	—	—	2.50
D. 14/34	13.5	13.92	84.88	—	.96

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VI c.—Weighted Mean Commercial Yields along Demerara River Banks, 1950.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes and over.*		
B. 37161	482.0	14.02	83.93	—	4.20
B. 34104	3,429.5	14.42	84.63	13.71	3.36
D. 14/34	697.8	14.97	85.06	13.94	3.24
Diamond 10	237.6	13.36	80.55	13.00	2.38
		Under 100	*Acres.*		
D. 26/39	3.0	15.38	86.90	—	3.67
B. 41227	28.0	14.41	84.19	—	3.47
D. 49/41	6.0	14.81	85.05	—	3.16
D. 142/41	26.4	14.70	83.38	—	3.11
P.O.J. 2878	12.3	15.75	84.38	—	2.44
		First 100 Acres	*Ratoons and over.*		
Co. 419	102.0	13.91	83.67	—	3.04
D. 14/34	1,049.7	15.49	86.05	14.57	2.90
B. 34104	3,356.9	14.37	84.69	14.40	2.90
Diamond 10	316.9	15.47	84.58	13.35	2.57
		Under 100	*Acres.*		
D. 200/36	26.0	17.46	88.20	—	3.81
B. 37161	17.5	14.98	84.63	—	3.54
P.O.J. 2878	35.5	15.28	83.43	—	2.87
Co. 421	67.0	14.85	83.68	—	2.20
Diamond 201	51.0	16.19	86.49	—	2.18
D. 21/40	4.0	14.80	84.57	—	2.01
		Second 100 Acres	*Ratoons and over.*		
D. 200/36	195.0	14.77	85.40	—	3.00
B. 34104	2,466.0	14.39	84.60	14.71	2.60
Co. 419	408.8	13.81	82.90	—	2.57
Diamond 10	401.4	14.40	84.98	13.00	2.42
D. 14/34	252.2	14.42	83.89	—	1.97
Co. 421	139.8	13.98	82.84	—	1.81
		Under 100	*Acres.*		
Diamond 201	48.0	15.74	87.50	—	2.77
Mixed	6.3	16.36	84.78	—	2.69
Diamond 9	20.0	14.99	85.13	—	2.15
D. 166/34	4.7	14.57	82.34	—	1.69
D. 21/40	4.0	13.77	80.06	—	1.26
		Third 100 Acres	*Ratoons and over.*		
Diamond 10	545.4	14.65	84.31	13.00	2.30
B. 34104	138.3	14.58	84.13	14.20	2.11
Co. 421	270.7	13.35	84.02	—	1.80
		Under 100	*Acres.*		
Co. 419	55.5	14.73	84.06	13.80	2.62
D. 200/36	4.0	13.18	81.64	—	2.03
D. 25/38	0.5	12.81	82.06	—	2.00
Diamond 201	7.3	14.64	83.02	—	1.96
D. 14/34	57.4	13.99	83.73	—	1.96
P.O.J. 2878	20.7	14.21	82.62	—	1.77
		Fourth 100 Acres	*Ratoons and over.*		
Diamond 10	129.7	15.67	84.51	13.00	1.80
		Under 100	*Acres.*		
Co. 421	17.0	14.49	84.44	—	2.31
B. 34104	9.0	—	—	—	1.50

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VI d.—Weighted Mean Commercial Yields in Berbice, 1950.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*		
D. 14/34	984.2	15.51	84.51	—	4.54
B. 34104	4,893.8	14.75	84.51	—	4.03
B. 37161	169.3	13.41	80.82	—	4.01
Co. 421	211.8	13.01	80.12	—	3.58
Co. 419	232.4	13.17	74.91	—	3.11
		Under 100	*Acres.*		
Mixed	7.0	14.99	84.20	—	6.93
B. 37172	2.3	12.58	79.66	—	4.78
B. 41227	14.0	14.30	84.37	—	3.82
B. 41211	6.3	12.08	77.90	—	3.78
D. 142/41	1.3	14.23	85.49	—	3.16
P.O.J. 2878	1.0	—	—	—	2.98
D. 166/34	4.0	13.49	81.20	—	2.50
D. 158/41	0.2	16.78	86.05	—	2.23
		First 100 Acres	*Ratoons. and over.*		
B. 34104	3,915.9	15.01	84.05	—	3.86
D. 14/34	577.6	14.92	83.87	—	3.56
Co. 421	1,198.5	13.43	79.80	—	3.51
Co. 419	178.0	13.17	78.21	—	2.90
		Under 100	*Acres.*		
B. 37161	11.0	14.11	80.51	—	4.33
Mixed	4.0	13.90	84.76	—	4.14
B. 41211	0.7	16.05	84.90	—	3.14
D. 25/38	48.0	14.12	80.46	—	3.10
B. 41227	2.1	—	—	—	2.86
B. 37172	0.5	13.22	80.10	—	1.80
		Second 100 Acres	*Ratoons. and over.*		
B. 34104	2,964.3	15.11	84.29	—	3.49
Co. 419	429.6	13.91	81.23	—	3.21
D. 14/34	1,632.2	15.17	83.70	—	3.15
Co. 421	842.3	14.03	81.09	—	2.58
Diamond 10	106.0	12.65	77.26	—	2.31
		Under 100	*Acres.*		
B. 37161	0.3	14.37	81.90	—	5.33
Mixed	17.0	14.09	84.84	—	3.40
P.O.J. 2878	20.9	15.96	86.32	—	3.03
D. 200/36	39.5	13.82	81.04	—	2.98
D. 25/38	4.5	12.86	78.39	—	2.75
		Third 100 Acres	*Ratoons. and over.*		
B. 34104	1,329.6	15.22	84.42	—	3.18
D. 14/34	1,185.2	14.54	82.60	—	2.84
Co. 419	427.3	13.18	78.82	—	2.83
Co. 421	1,234.8	13.68	81.59	—	2.66
P.O.J. 2878	185.4	14.25	82.99	—	2.21
		Under 100	*Acres.*		
Diamond 201	0.2	12.64	77.67	—	3.64
D. 200/36	44.7	15.81	83.48	—	2.67
D. 25/38	73.0	12.78	80.28	—	2.45
Mixed	5.0	—	—	—	2.23
D. 21/40	1.2	13.31	79.06	—	2.18
Diamond 10	75.8	15.53	85.33	—	2.11
D. 166/34	8.0	13.97	79.41	—	2.03
		Fourth 100 Acres	*Ratoons. and over.*		
B. 34104	154.0	13.01	82.50	—	3.16
Co. 419	224.9	14.09	81.11	—	2.99
Co. 421	414.8	13.63	81.12	—	2.83
D. 14/34	220.1	14.53	82.11	—	2.28
		Under 100	*Acres.*		
D. 200/36	9.0	12.15	78.95	—	2.57
P.O.J. 2878	90.3	—	—	—	2.49
Diamond 10	10.0	—	—	—	1.54
		Fifth 100 Acres	*Ratoons. and over.*		
Co. 421	100.2	13.56	82.23	—	2.32
		Under 100	*Acres.*		
B. 34104	53.6	15.59	83.06	—	3.02
Co. 419	5.0	15.03	81.68	—	2.60
D. 166/34	2.8	—	—	—	2.50
D. 14/34	13.5	13.92	84.88	—	.96

* Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE VI e.—Weighted Mean Commercial Yields Under Estate Conditions, 1950.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Purity.	Fibre % Cane.	Tons 96° Sugar per Acre.*
		Plant Canes. 100 Acres and over.			
B. 37161	764.2	13.98	83.14	15.36	4.09
D. 14/34	3,148.9	15.04	84.24	—	3.77
Co. 421	211.8	13.01	80.12	—	3.58
B. 34104	13,956.3	14.57	84.00	—	3.57
Co. 419	369.0	13.15	76.53	17.24	3.24
Diamond 10	237.6	13.36	80.55	11.93	2.38
		Under 100 Acres.			
B. 37172	2.3	12.58	79.66	—	4.78
D. 142/41	73.5	14.04	82.87	17.41	3.94
B. 41227	95.3	14.78	84.12	—	3.94
B. 41211	6.3	12.08	77.90	—	3.78
D. 49/41	43.9	14.61	83.77	—	3.62
B. 40105	25.9	14.88	83.14	—	3.55
B. 40102	51.3	13.95	80.50	—	3.02
D. 26/39	25.0	15.78	87.37	13.97	2.56
D. 166/34	4.0	13.49	81.20	—	2.50
P.O.J. 2878	13.3	14.57	78.04	—	2.48
D. 158/41	0.2	16.78	86.05	—	2.28
Mixed	8.7	15.90	85.02	—	2.27
		First Ratoons. 100 Acres and over.			
Co. 421	1,336.5	13.46	80.05	—	3.35
B. 34104	11,462.5	14.54	83.82	—	3.32
D. 14/34	3,638.6	15.36	84.99	—	2.85
Co. 419	628.3	13.77	81.16	—	2.80
D. 200/36	105.2	14.73	83.67	—	2.70
Diamond 10	398.5	15.15	84.18	11.59	2.61
		Under 100 Acres.			
B. 37161	51.8	14.28	83.20	15.14	3.85
B. 41211	0.7	16.05	84.90	—	3.14
D. 25/38	48.0	14.12	80.46	—	3.10
D. 49/41	1.3	15.32	85.58	—	3.08
P.O.J. 2878	35.5	15.28	83.43	—	2.87
D. 142/41	7.5	12.68	83.13	—	2.86
B. 41227	2.1	—	—	—	2.86
Mixed	13.5	12.32	71.96	—	2.41
D. 26/39	2.0	13.38	79.91	—	2.25
Diamond 201	51.0	16.19	86.49	—	2.18
D. 21/40	4.0	14.80	84.57	—	2.01
B. 37172	0.5	13.22	80.10	—	1.80
		Second Ratoons. 100 Acres and over.			
B. 34104	8,330.2	14.67	84.07	—	2.98
Co. 419	1,133.8	14.03	82.35	—	2.87
D. 14/34	3,343.9	15.05	83.86	10.17	2.80
Diamond 10	807.1	13.04	75.71	11.08	2.56
Co. 421	1,020.1	13.79	80.32	—	2.49
D. 200/36	265.7	14.57	84.13	—	2.42
P.O.J. 2878	131.9	14.96	83.70	—	2.21
		Under 100 Acres.			
Mixed	56.3	13.79	78.35	—	3.10
Diamond 201	48.0	15.74	87.50	—	2.77
B. 37161	1.3	13.83	80.75	—	2.77
D. 25/38	4.5	12.86	78.39	—	2.75
D. 26/39	1.7	14.77	82.75	—	2.29
Diamond 9	20.0	14.99	85.13	—	2.15
D. 21/40	4.0	13.77	80.06	—	1.69
D.166/34	4.7	14.57	82.34	—	1.26
		Third Ratoons. 100 Acres and over.			
B. 34104	2,238.7	14.84	83.51	—	2.85
Co. 419	742.3	13.85	80.38	11.66	2.76
D. 14/34	1,813.9	14.71	83.02	10.74	2.66
D. 200/36	129.0	15.09	83.37	—	2.51
Co. 421	1,671.8	13.67	81.99	—	2.49
Diamond 10	685.5	13.20	75.99	—	2.24
P.O.J. 2878	353.1	13.34	77.73	—	2.12
		Under 100 Acres.			
D. 25/38	73.5	12.78	80.29	—	2.45
D. 21/40	1.2	13.31	79.06	—	2.18
D. 166/34	8.0	13.97	79.41	—	2.03
Diamond 201	7.5	14.58	82.84	—	2.01
Mixed	29.0	14.99	84.64	—	1.49
		Fourth Ratoons. 100 Acres and over.			
Co. 419	314.9	14.36	81.70	14.91	2.89
Co. 421	490.8	13.63	81.28	—	2.76
B. 34104	218.8	13.72	78.80	15.20	2.59
D. 14/34	470.6	14.37	82.78	15.18	2.33
P.O.J. 2878	160.3	13.25	79.39	—	2.03
Diamond 10	139.7	15.67	84.51	11.45	1.78

Only three varieties appear consistently as having been planted on a minimum of 100 acres in the four regional categories. They are B. 34104, D. 14 34 and Co. 419. Of these, B. 34104 is still the best and most consistent and both in Berbice and on the East Coast Demerara, it was seldom beaten. Its performance in West Demerara and on the River Banks was less satisfactory and as already intimated, it may be expected to be eclipsed when the newer varieties come into bearing. D. 14 34 did reasonably well as plants, topping the list in West Demerara and Berbice. The abnormally wet conditions which prevailed during 1949, however, mitigated against the successful ratooning of this variety and, as ratoons, it was generally inferior both to B. 34104 and Co. 419. The latter outyielded all other varieties as first ratoons in the Demerara River Districts, as second ratoons on East Demerara Coastlands and as third ratoons on West Demerara Coastlands. It appears to be still a useful variety which is handicapped by its unsatisfactory behaviour in the factory.

Among the newer varieties which appear in the tables, attention should be drawn to the performance of B. 41227 which over 53 acres in East Demerara yielded an average of 4.22 tons sugar per acre. Its plant cane average over 95.3 acres throughout the Colony was 3.94 tons sucrose per acre and this compares favourably with B. 34104 which yielded 3.57 tons sucrose per acre. B. 37161 averaged 4.20 tons sucrose per acre over close on 500 acres reaped in the Demerara River area to which region it seems specially well suited. From a total of 764.2 acres reaped throughout the Colony the average yield for this variety was 4.09 tons sucrose per acre.

FERTILIZERS IN 1950.

Table VII presents statistics relative to the value and quantity of fertilizers used in British Guiana for the three years 1948, 1949 and 1950. Data used in this table has been kindly supplied by estate Managers.

TABLE VII.—Values and Quantities of Fertilizers Used on British Guiana Sugar Estates, 1948—1950.

Fertilizers.	Value, $			Per cent. of Total Value.			Per Ton, $			Quantity, Tons.			Per cent. of Total Quantity.		
	1948	1949	1950	1948	1949	1950	1948	1949	1950	1948	1949	1950	1948	1949	1950
Ammonium Sulphate	895,668.33	1,010,207.16	1,501,400.71	77.2	81.7	91.4	103.89	107.69	113.31	8,621.61	9,380.59	13,250.17	47.4	53.2	68.0
Calcium Cyanamide	37,327.80	20,568.78	4,535.73	3.2	1.7	.3	114.98	130.30	126.24	324.65	157.85	35.93	1.8	.9	.1
Basic Slag	85,898.66	77,902.58	12,812.85	7.4	6.3	.7	58.88	62.28	59.27	1,458.90	1,250.82	216.18	8.0	7.1	1.3
Superphosphate	397.52	554.60	595.95	...	...	.1	64.64	56.59	58.89	6.15	9.80	10.12	...	.1	...
Limestone	110,591.31	107,426.41	100,023.61	9.6	8.7	6.1	15.97	17.04	18.65	6,922.86	6,304.07	5,363.60	38.1	35.7	27.6
Rock Phosphate	29,901.61	19,275.93	22,403.86	2.6	1.6	1.4	35.13	36.75	38.02	851.25	524.55	589.25	4.7	3.0	3.0
TOTAL	1,159,785.23	1,235,935.46	1,641,772.71	100.0	100.0	100.0	...	...	...	18,185.42	17,627.68	19,465.25	100.0	100.0	100.0

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1950.

STAFF.

W. H. C. Knowles, A.I.C.T.A., Dip. Agr.	*Sugar Agronomist.*
C. Cameron	*Field Manager.*
D. L. Corsbie	*Field Assistant.*
H. I. Gomes	*Field Assistant.*
G. A. Vieira	*Field Assistant.*
H. B. Singh	*Laboratory Assistant, (to April)*
C. A. V. Smith	*Laboratory Assistant, (from May)*
D. K. Cameron	*Typist, (from May)*

2. Mr. Vieira resigned the post of Third Field Assistant on 31st December to accept an appointment in Aruba, N.W.I.

3. Mr. Singh resigned the post of Laboratory Assistant on 15th April and Mr. Smith, then Statistical Assistant, was appointed to the vacancy on 1st May.

4. Absences of the Staff from duty during the year were as follows :—

	Casual Leave.	*Sick Leave.*	*Vacation Leave.*
Mr. Knowles	—	28.9—17.10.50	1.5—2.9.50
Mr. Cameron	—	3—21.1.50 and 15—20.11.50	6—31.12.50
Mr. Smith	19.6—3.7.50	—	—
Mr. Corsbie	1—15.5.50	3—11.11.50	—
Mr. Gomes	22,5—5.6,50	12—19.6,50	—

COMMITTEE.

5. The following members formed the British Guiana Sugar Experiment Stations' Committee for the year :—

The Director of Agriculture	*Chairman.*
Mr. R. R. Follett-Smith	*Messrs. Bookers Sugar Estates Ltd.*
Mr. W. Mailer	*Messrs. Bookers Sugar Estates Ltd. (from June)*
Mr. G. M. Eccles	*Messrs. S. Davson & Co., Ltd.*
Mr. L. S. Birkett	*Messrs. S. Davson & Co., Ltd. (from June)*
Mr. H. R. Barnwell	*Messrs. Sandbach, Parker & Co., Ltd.*
Mr. H. A. Barclay	*Messrs. Bookers Sugar Estates Ltd.*
Mr. R. F. Milne	*Messrs. Bookers Sugar Estates Ltd.*
Capt. J. F. Irving, M.C.	*Department of Agriculture — Secretary, (to August)*
Mr. A. A. D. Martin	*Department of Agriculture — Secretary, (from September)*

There was only one meeting—11th December—of this Committee during the year.

RESEARCH SUB-COMMITTEE.

6. The following members formed the British Guiana Sugar Experiment Stations' Research Sub-Committee for the year :—

The Director of Agriculture	*Chairman.*
Mr. L. D. Cleare, Deputy Director of Agriculture	*Chairman, (February)*
Mr. R. R. Follett-Smith	*Messrs. Bookers Sugar Estates Ltd. Acted Chairman, (March)*
Mr. J. F. Williams	*Messrs. Bookers Sugar Estates Ltd.*
Mr. W. Mailer	*Messrs. Bookers Sugar Estates Ltd. (March)*
Mr. L. S. Birkett	*Messrs. S. Davson & Co., Ltd.*
Mr. A. Harley	*Messrs. Sandbach, Parker & Co., Ltd.*
Dr. E. J. Risdon	*Messrs. Sandbach, Parker & Co., Ltd. (April)*
Mr. M. D. Ffrench-Mullen	*Chief Research Officer, Department of Agriculture, (October)*
Mr. W. H. C. Knowles	*Sugar Agronomist and Secretary.*
Mr. C. Cameron	*Sugar Agronomist, (Actg.)*
Capt. J. F. Irving, M.C.	*Secretary, (May and July)*

Meetings were held in February, March, April, May, July, October and December, 1950.

FINANCE.

7. The sum of $43,568.00 was voted from the funds of the Sugar Experiment Stations' Committee for the working of the Station during the year; the total expended was $45,512.80.

8. Of the amount spent from the funds of the Committee $56.06 was spent on Research Equipment, $1,216.89 on passages to and from the United Kingdom for the Sugar Agronomist (on vacation leave) and his wife; and $912.00 on the British West Indies Sugar Technologists' Conference in Jamaica.

9. Receipts from assessments during the year amounted to $29,792.84, those from sale of canes to $20,080.18 and miscellaneous receipts to $1,175.56.

EQUIPMENT.

10. During the year minor repairs were carried out to the Office Buildings, Front and Backdam Watchhouses, Bridge and Truckline over the Lamaha Canal, Bridge leading to Field 7 W.

In addition the Station acquired two new calculating machines and research equipment included a Tilley floodlight Projector for artificial illumination to suppress cane arrowing. This was handed over to Pln. Uitvlugt for use there as agreed by the Research Sub-Committee.

CANE BREEDING AND INTRODUCTION.

TABLE I.—**Demerara Seedlings in Tests and Undergoing Multiplication, etc., December, 1950.**

Year.	Number of Seedlings.	
	In Test.	Under Multiplication, etc.
1934	1	—
1940	—	—
1941	2	3
1942	—	—
1943	6	7
1944	4	3
1945	45	88
1946	49	260
1947	Breeding ceased in 1946.	
Total	107	361

TABLE II.—**Barbados Seedlings in Tests and Undergoing Multiplication, etc., December, 1950.**

Year.	Number of Seedlings.	
	In Test.	Under Multiplication, etc.
1933	—	—
1934	1	1
1937	2	2
1938	—	—
1940	2	2
1941	1	1
1942	1	1
1943	6	7
1944	8	8
1945	15	17
1946	30	36
1947	34	37
Total	100	112

11. *The Demerara 1946 seedlings* have been subjected to their first selection and 260 have been extended on frontland clay at Sophia.

12. Cane varieties received during the year through the Central Breeding Station, Barbados, B.W.I., were as follows: B.4847, B.4851, B.4867, B.4881, B.4888, B.4893, B.4895, B.48106, B.48117, B.48125, B.48126, B.48177, B.48179, B.48228, B.48231, B.48251, B.48259, B.48330, B.48332, B.48350, B.48351, B.48372, B.48375, B.48384, B.48392.

EXPERIMENTS.

13. This issue records the number of experiments reaped during the year, and will not be discussed here. At the end of the year there were 85 variety, 15 manurial and 7 cultivation experiments in progress.

MISCELLANEOUS.

14. Table III gives statistics, for recent years, as to field experiments started and reaped, cane cuttings distributed, cane samples analysed, etc.

TABLE III.—Statistics of Seedlings, Cane Distribution, Field Experiments, Cane and Soil Samples, Cane Sold and Visits Paid to Estates, 1941–1950.

Year.	Seedlings Basketed.	Cane Cuttings Distributed.		Field Experiments.		Cane Samples.		Soil Samples Taken.	Cane Sold to Pln. Ogle.		No. of Days Visiting Estates.
		No. of Cuttings.	No. of Bags.	Started.	Harvested.	No. Taken and analysed.	Cane Crushed (Tons).		Deliveries (Tons).	Net Receipts. $	
1941	21,354	637,780	4,906	30	62	626	7	18	1,077.50	2,713.32	230
1942	6,007	881,660	6,782	28	74	909	21	9	1,476.70	3,718.98	212
1943	8,951	524,810	4,037	19	78	819	16	159	1,352.85	3,525.65	211
1944	12,903	602,420	4,634	11	72	434	14	31	1,590.09	5,053.26	139
1945	6,043	578,240	4,448	98*	118†	605	14	95	1,461.02	6,812.25	173
1946	3,896	447,230	3,671	55*	111†	505	15	51	1,750.20	8,776.95	177
1947	—	172,900	1,330	27*	64†	403	15	18	2,153.37	9,542.47	211
1948	—	347,230	2,671	37	54	476	12	290††	2,232.05	9,892.36	162
1949	—	310,180	2,386	28	62	953	22	14†††	2,535.19	15,892.34	154
1950	—	105,720	1,762	18	65	719	24	—	3,135.25	20,080.18	154

1945 { *Includes 64 Maize Micro-plot Experiments.
{ †Includes 53 „ „ „

1946 { *Includes 30 „ „ „
{ †Includes 39 „ „ „

1947 { *Includes 5 „ „ „
{ †Includes 5 „ „ „

1948 ††Includes 201 Sent to the I.C.T.A.

1949 †††Sent to Yale University.